

AD720592

AD

REPORT NO. 69

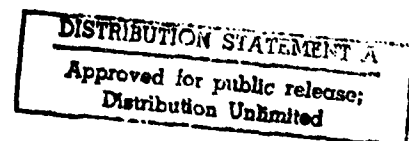
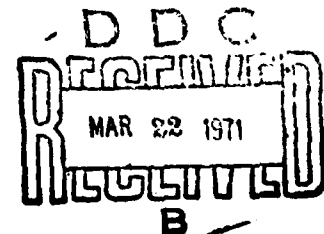
REPORT ON THE OPERATIONS OF THE
ENVIRONMENTAL DATA COLLECTION
AND
PROCESSING FACILITY

FORMAL PROGRESS REPORT NO. 2

MARCH 1971

ELECTRONICS DIRECTORATE
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR
COMMUNICATIONS-ELECTRONICS
DEPARTMENT OF THE ARMY

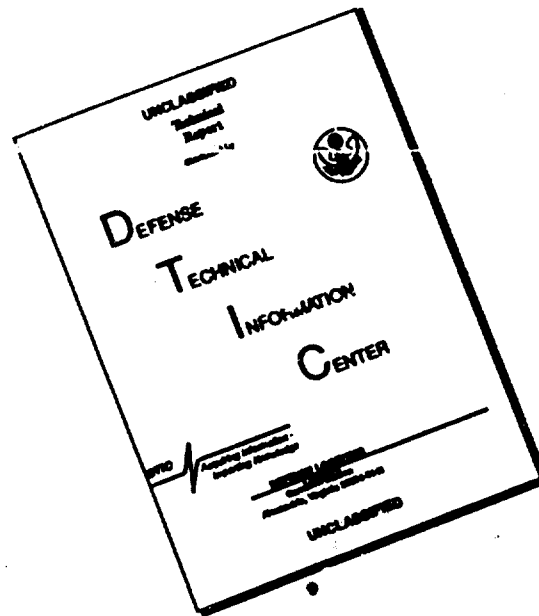
CONTRACT NO. DAAB07-71-C-0010
BELL AEROSPACE COMPANY
DIVISION OF TEXTRON
1050 EAST VALENCIA ROAD
TUCSON, ARIZONA 85706



Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
Springfield, Va 22151

50

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

REPORT NO. 69

REPORT ON THE OPERATIONS OF THE
ENVIRONMENTAL DATA COLLECTION
AND PROCESSING FACILITY (EDCPF)

FORMAL PROGRESS REPORT NO. 2

1 OCTOBER 1970 THROUGH 31 DECEMBER 1970

MARCH 1971

Environmental Data Collection and Processing Facility
Contract No. DAAB07-71-C-0010
PR&C No. 71X02
Electronics Directorate
Office of the Assistant Chief of Staff for
Communications-Electronics
Department of the Army

Bell Aerospace Company
Division of Textron
1050 East Valencia Road
Tucson, Arizona 85706

Bell Report No. A70009-739

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

AVAILABILITY NOTICE

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

ACCESSIO.		
REPORT	STAFF SECTION	
DOC	STAFF SECTION	
UNCLASSIFIED	<input type="checkbox"/>	
RESTRICTED		
97		
DISTRIBUTION AVAILABILITY CODES		
DISC.	AVAIL.	SPECIAL
A		

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Destroy this report when no longer needed.
Do not return it to the originator.

FOREWORD

The Department of Defense (DOD) Electromagnetic Compatibility Program (EMCP) was established as a means of consolidating and coordinating the compatibility efforts within the military services. The EMCP is designed to achieve and maintain electromagnetic compatibility within and among the military services, and to insure that military communications-electronics (C-E) systems will not suffer operational failure or serious degradation because of radio frequency interference.

The Army EMCP has the same objectives as the overall DOD program, but is oriented toward intra-Army problems. The Assistant Chief of Staff for Communications-Electronics (ACSC-E) is responsible for providing Army support to the DOD EMCP and for coordinating the efforts of Army commands and agencies to insure adequate participation in, and compliance with, the overall DOD and Army programs.

The Environmental Data Collection and Processing Facility (EDCPF) was established to support the ACSC-E in fulfilling his responsibilities to the DOD and Army EMCP's, and to provide support through studies and recommendations for improved spectrum management. The EDCPF maintains current and future time frame technical and tactical data bases, including detailed C-E environments representative of potential military conflicts. The Bell Aerospace Company currently operates this facility in Tucson, Arizona under Contract No. DAAB07-71-C-0010. For more details on the support provided, see EDCPF Report No. 63, EDCPF Products and Services Catalog, dated June 1970.

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
FOREWORD	iii
I. PROJECT MANAGEMENT AND GENERAL SUPPORT	1
A. GENERAL	1
B. SYSTEM MAINTENANCE	1
II. PROGRAM REQUIREMENTS	2
A. OPERATIONAL SUPPORT	2
B. WASHINGTON ENGINEERING	2
III. MAINTENANCE OF THE C-E DATA BANK	2
A. TACTICAL DATA BASE	2
B. TECHNICAL DATA BASE	3
C. MAINTENANCE AND UPDATE OF EXISTING C-E ENVIRONMENTS	4
1. Future Time Frame Field Army	4
2. Future Time Frame Tactical Air Force	4
3. Future Time Frame Enemy Forces	5
4. Future Time Frame Theater Army	5
D. DEVELOPMENT OF NEW C-E ENVIRONMENTS	5
1. Enemy-75 CAA and Front	5
2. Two-Corps Environment (1971-1973)	5
APPENDIX A - PROJECT MANAGEMENT AND GENERAL SUPPORT	A-1
APPENDIX B - SYSTEM MAINTENANCE	B-1
APPENDIX C - OPERATION SUPPORT	C-1
APPENDIX D - EMCP MANAGEMENT INFORMATION AND CONTROL SYSTEM	D-1
APPENDIX E - DEVELOPMENT OF NEW C-E ENVIRONMENTS	E-1
DISTRIBUTION LIST	

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Page</u>
B-1. Overall C-E Environmental Simulation System Flowchart	B-2
B-2. Detailed C-E Environmental Simulation System Flowchart - Part I	B-3
B-3. Detailed C-E Environmental Simulation System Flowchart - Part II	B-4
B-4. Detailed C-E Environmental Simulation System Flowchart - Part III	B-5
B-5. Detailed C-E Environmental Simulation System Flowchart - Part IV	B-6
B-6. Detailed C-E Environmental Simulation System Flowchart - Part V	B-7
B-7. Detailed C-E Environmental Simulation System Flowchart - Part VI	B-8
B-8. New EMETF Deployment Tape Format	B-10
B-9. Sample Display of Net Frequency Requirements	B-11
B-10. Sample Organizational Equipment List Display	B-12
C-1. U. S. Army Organization Platform Allowance File Listing	C-2
C-2. U. S. Army TOE and Aircraft Association Listing	C-3
C-3. Frequency Allocation to Equipment File (Army) Listing	C-4
C-4. Frequency Allocation to Equipment File Index	C-5
C-5. Net Data File Listing	C-9
C-6. Net Data File Comparison Table Listing	C-10
E-1. Disposition of Major Field Army Elements	E-3

LIST OF TABLES

<u>Table</u>	<u>Page</u>
A-I. Reports	A-2
A-II. Contract Delivery Items	A-3
A-III. Meetings and Conferences	A-6

I. PROJECT MANAGEMENT AND GENERAL SUPPORT

A. GENERAL

The first quarterly progress report for the period 1 July 1970 through 30 September 1970 was forwarded to the ACSC-E on 12 October 1970. This report, EDCPF Report No. 68, was distributed in final form on 5 November 1970. Monthly letter reports for the months of October and November were forwarded to the ED on 12 November and 12 December, respectively. Technical and administrative reports are listed in table A-I, appendix A.

Contract delivery items prepared and delivered during this period are listed in table A-II, appendix A. Conferences, meetings, and briefings attended during the second quarter of the contract are listed in table A-III, appendix A.

During this report period, both the Tucson and Arlington facilities received security inspections from the cognizant security offices. No discrepancies were noted at either facility.

A total of 13,930 hours were expended on the contract during the report period. A list of personnel and hours worked has been provided the COR.

B. SYSTEM MAINTENANCE

The three major EDCPF systems, the Communications-Electronics Environmental Simulation System (CEESS), General Retrieval and Display System (GRADS), and the Data Base Maintenance and Update System (DEMUS), were all operated, maintained and enhanced as required in this report period. The primary emphasis on system enhancements was devoted to the modification of the CEESS to meet new deployment data requirements of the Electromagnetic Environmental Test Facility (EMETF). Several program modifications were made to satisfy the deployment data and tape format changes required by the EMETF. The most significant changes involved the reformatting of the deployment tape from a 168- to a 100-character length record. Also included in the reformatting effort were changes to several data fields such as changing the "equipment operator" designator from a 14-character abbreviated prose field to a 4-character numeric coded field, changing the units of geographic coordinates from tenths of seconds to ten-thousandths of degrees, and the standardizing of net numbers. Other enhancements were incorporated into the CEESS to improve data preparation, validation, and verification. Two primary programs were developed which provided considerable insight into the production of deployments; these programs are ESS013 (Net Structure Validate) and ESS014 (Net Frequency Requirements). Details of these programs and other CEESS enhancements are discussed in appendix B.

Minor changes were made to the programs in the GRADS and DEMUS systems. These included better methods of processing the data. Typical changes include the modification of programs for computer disk sorts instead of tape sorts to

decrease computer run times, adding more retrieval keys in the GRADS to expand the overall data display capability, and adding more error checks in the DEMUS as an extra measure in validating the data in the files.

II. PROGRAM REQUIREMENTS

A. OPERATIONAL SUPPORT

Thirty-three operational support tasks have been assigned in the first half of the contract year. Of the 33 tasks, 2 have been cancelled, 20 have been completed, and 11 are current. The two tasks cancelled were the MALLARD International EMC Data Base and Force Model 5. Details of the effort expended on each operational support task during the quarter can be found in appendix C.

B. WASHINGTON ENGINEERING

The Washington Engineering office of the EDCPF has continued to provide coordination with the ACSC-E and other agencies in the Washington, D. C. area in support of EDCPF contractual efforts. The major effort of this group continues to be devoted to the maintenance and operation of the EMCP Management Information and Control System. During this period the MICS data base was updated and modified as required to better satisfy user needs. The modifications were primarily format changes in MICS automated reports. Details of the MICS effort during this report period are contained in appendix D.

III. MAINTENANCE OF THE C-E DATA BANK

A. TACTICAL DATA BASE

During this report period the major effort on tactical data bases was the preparation of file information to support the Two-Corps (1971-1973) Field Army, the M60A1E2 and Sheridan/Shillelagh environment, and the Enemy-75 CAA and Front.

To insure that the Equipment Authorization File (EAF) for the two-corps deployment contained the latest TOE data, the EAF representing the current time frame forces was updated. All 44 T-series TOE's published for the ASTRO division were added. The U. S. Army Management Systems Support Agency provided complete Organizational Equipment Lists (OEL) on computer tapes. TOE data on C-E equipment and associated items were extracted from these tapes for all H-series and T-series TOE's. Similarly, all G-series TOE data was extracted to permit update of existing G-series data where required. As a result of this update action, a total of 44 G-series TOE's were added, 75 H-series replaced existing G-series TOE's and 81 G-series TOE EAF records were updated, based on the latest data. These represented the addition of 2,026 new individual records, the deletion of 753 obsolete records and changes to approximately 2,100 records. The updated EAF was processed through the computer error-check routines to prepare the file for use in a deployment early in the next quarter.

STANO equipments authorized in current TOE's were added to the EAF. Unattended ground sensors were also added to provide a representative mix of phase III type sensor equipments. This data will be updated as new basis of issue information is received.

Preparation of all EAF data required for the opposing forces and the Tactical Air Force was completed, including the frequency data for over 7,500 communications nets. Codebook, Equipment Characteristics, Antenna, Net, and Application File updates were also made.

Approximately 1,600 T-series TOE entries were made in the EAF. These TOE's represent the ASTRO mechanized division. Net number assignment and final processing of these TOE's will be completed in the next quarter.

The Net File (NF) was reduced from approximately 6,500 to 4,500 records. In addition to reducing the overall size of this file, the consolidation enhanced the tactical data base by making it possible to create an environment of a mixture of current and future time frame TOE's. In addition, the NF has been improved by the numbering of the multichannel systems. This facilitates a display of the total multichannel systems from central-to-central rather than just link-by-link.

A net number conversion table was developed to provide a means of converting all existing data files to the new numbers. To insure correct net number conversions, a comparison table was prepared which displays the old and new net data. This printout shows the net number, description, modulation and frequency limits of both the old and new nets.

The NF, card deck conversion table, printout of the card deck, and a printout of the comparison table were delivered to the EMETF on 30 October 1970.

The current EAF was updated to include all new and changed TOE information so as to provide the ECAC with an update to the Organization Platform Allowance File (OPAF), formerly known as the Vehicle Equipment Complement Index (VECI). This delivery included a list of all new current TOE's using C-E equipment, C-E equipment authorized in the TOE's, aircraft and marine craft authorized, and their associated C-E equipments. In addition, the ECAC was furnished worldwide asset information on Army aircraft and helicopters by theaters. A final update to the OPAF will be provided the ECAC during the fourth quarter of this contract year.

B. TECHNICAL DATA BASE

The Frequency Allocation to Equipment File (FAEF) was updated to include all J/F-12 actions up to 16 October 1970. During this quarter a total of 106 actions were processed, of which 59 were new frequency allocation requests, 38 were approval actions, and 9 were changes and cancellations.

All FAEF data added during this period were validated prior to the preparation of the new FAEF printout. The FAEF printout was distributed at the end of this quarter in accordance with guidance received from the COR. A

master index was included in order to make this product more useful. This index permits more rapid location of an allocation document when only the allocation number is known. This additional volume was added as the result of a user suggestion.

The AERF was updated with the data contained in the Army J/F-12 actions in the FAEF and all AERF function codes were verified. The function code permits retrieval of all C-E equipments listed in the AERF by major function.

The AERF was updated by the addition of antenna data to those equipments for which the current data were not previously available. Additions to the technical data from current TM's were also made. TM numbers and component nomenclatures were added to equipment files where required.

The AERF was reviewed against the ECAC current equipment characteristics file. Differences were noted and changes made where required.

C. MAINTENANCE AND UPDATE OF EXISTING C-E ENVIRONMENTS

1. Future Time Frame Field Army

During the period approximately 3,000 updates were made in the deployment of the AN/UVS-1 equipments. These updates included changes in netting, UTM coordinates, and elevations for airborne components.

Approximately 1,800 updates were made to the equipments comprising the Joint In-Flight Data Transmission System (JIFDATS). Different criteria were used to determine location and altitudes of the airborne equipments, depending on whether they were employed on a side-looking airborne radar mission or an infrared mission.

Several updates were made to the AN/URC-68 radio sets deployed with the Special Forces. Long link distances were discovered for this relatively low-powered radio. These radios were changed to net with friendly aircraft flying in their vicinity.

2. Future Time Frame Tactical Air Force

Several Tactical Air Force fighter planes were relocated during the report period. These updates were necessary to provide an airborne radio set in the vicinity of certain friendly patrols operating behind enemy lines.

During a visit to Headquarters, U. S. Air Force, it was recommended that the exclusive-user multichannel equipments and systems deployed in support of the seven intertheater airfields be deleted. At the same time a request was made to the Air Force for appropriate documents required as a basis for updates to the Tactical Air Force and Theater Air Force deployments. When these documents are received the recommended changes and other appropriate updates will be made.

3. Future Time Frame Enemy Forces

The fixed files for nondivisional units were updated to support the development of a new environment for the echelons above division. No updates have been made to this deployment file during the report period; however, the data for the organic divisions deployed in contact along the FEBA have been extracted and processed for inclusion in the enemy deployment.

4. Future Time Frame Theater Army

There was no change to the COMMZ elements during this report period.

D. DEVELOPMENT OF NEW C-E ENVIRONMENTS

1. Enemy-75 CAA and Front

During the report period, the required updates to supporting fixed files, the geographic positioning of all units, and the production of delivery copies of all tactical overlays and multichannel systems diagrams were completed. The production of environmental deployment data continued.

The acquisition of resource material, sanitized to the SECRET category of classification and in such detail as to display the employment of the total C-E inventory down to component level, continues to be a problem. A research visit was made to the U. S. Army Security Agency, Combat Developments Activity, during the latter part of the report period. Details on this visit are classified and will not be covered herein.

The collection of pinpoint deployment data required to complement the controlled distribution data will be completed early during the next period. A more detailed report of progress is contained in appendix E.

2. Two-Corps Environment (1971-1973)

Early in the quarter the development of a MALLARD deployment was suspended and the effort redirected toward development of a 1971-1973 two-corps environment.

The MALLARD troop list and task organization were modified to include ASTRO divisions. The modification entailed substitution of three infantry (mechanized) ASTRO divisions for the original 2nd, 3rd and 5th divisions. The tactical map deployment and the overlay design of the multichannel communications systems have been completed. Call cards and fixed files, based on G- and T-series TOE's were completed during this period. Further deployment processing has been suspended in order to accomplish update of the fixed files to conform to H-series TOE's which have recently become available. The fixed file update and the production of the Two-Corps Field Army deployment tape will be completed in the next period.

The Tactical Air Force considered appropriate to support this deployment consists of seven tactical air bases with twelve fighter, three reconnaissance, one refueling and six airlift squadrons. The TAF includes an Air Force

Component Command Post, Tactical Air Control Center and the necessary additional complementary units required to establish a Tactical Air Control System.

APPENDIX A

PROJECT MANAGEMENT AND GENERAL SUPPORT

Table A-I is a list of reports produced during the period 1 October 1970 through 31 December 1970.

Table A-II is a list of contract items delivered during this period.

Table A-III is a list of meetings and conferences attended by EDCPF personnel during this report period.

Table A-I. Reports

Type	EDCPF No.	Title	Date
Quarterly Draft	68	Contract Formal Progress Report No. 1, 1 July 1970 - 30 September 1970	12 Oct 70
Quarterly Final	68	Contract Formal Progress Report No. 1, 1 July 1970 - 30 September 1970	5 Nov 70
Monthly Letter Report	-	Monthly Letter Report for October 1970	12 Nov 70
Monthly Letter Report	-	Monthly Letter Report for November 1970	12 Dec 70

Table A-II. Contract Delivery Items

Agency	Item	Date
ECAC	Proposed Australian Table of Frequency Allocations (10 Gc/s to 40 Gc/s) Verification of ECAC Electronic Equipment Environment Records Verification of ECAC Electronic Equipment Environment Records Verification of ECAC Electronic Equipment Environment Records ECAC Organization Platform Allowance File (OPAF) Update Verification of ECAC Electronic Equipment Environment Records Verification of ECAC Electronic Equipment Environment Records Verification of ECAC Electronic Equipment Environment Records Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	4 Nov 70 6 Nov 70 13 Nov 70 24 Nov 70 1 Dec 70 8 Dec 70 18 Dec 70 22 Dec 70
ACSC-E	Verification of ECAC Electronic Equipment Environment Records Review Draft of EDCPF Report No. 68, Contract Formal Progress Report No. 1 Magnetic Tape Containing Computer Programs FAEF Tape Communications Systems Diagrams and Spectrum Occupancy Table MICS and CEES Tapes and Information EDCPF Report No. 68, Contract Formal Progress Report No. 1 CEES Flowchart MICS Test Tapes MICS Listings Technical Library Index EDCPF Products and Services Catalog EDCPF Antenna Code Listings Net Data File FAEF/AERF Listing (220-405 MHz) EDCPF Magnetic Tapes for Duplicate Storage Allied C-E Equipment Characteristics (220-405 MHz) Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70 31 Dec 70 12 Oct 70 22 Oct 70 27 Oct 70 2 Nov 70 3 Nov 70 5 Nov 70 9 Nov 70 17 Dec 70 21 Dec 70 5 Oct 70 7 Oct 70 23 Oct 70 30 Oct 70 4 Nov 70 6 Nov 70 6 Nov 70
USAEFG	Single Channel Net Data to Support TACSATCOM Cost Effectiveness Study Single Channel Net Data to Support TACSATCOM Cost Effectiveness Study	28 Dec 70 8 Oct 70 9 Oct 70
USACDCCEA		

Table A-II. Contract Delivery Items (cont)

Agency	Item	Date
USACDCCEA (cont)	Theater Army, Field Army, Tactical Air Force, and Theater Air Force Communications Systems Diagrams	15 Oct 70
	Single Channel Net Data to Support TACSATCOM Cost Effectiveness Study	22 Nov 70
	Theater Army and Field Army Communications Systems Diagrams	23 Nov 70
	Single Channel Net Data to Support TACSATCOM Cost Effectiveness Study	27 Oct 70
	Single Channel Net Data to Support TACSATCOM Cost Effectiveness Study	28 Oct 70
ECOM	EW Jammers Used in CE/EW-75 Deployment	27 Nov 70
	MICS Listing	9 Dec 70
North American Rockwell Co. USASA	EDCPF Products and Services Catalog	8 Oct 70
	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
Third Army	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
Fourth Army	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
Hqs, AD&TC (AFSC)	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
DBMD (ASFS)	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
AFC White Sands	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
AFC	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
Fort Huachuca	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
CG, Fort Bliss, Texas	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
EDL	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
USCONARC	Frequency Allocation to Equipment File (FAEF) Listings, Army, Navy and Air Force	28 Dec 70
CECAA	Program Documentation	28 Dec 70
	PERT/Time Report	23 Dec 70

Table A-II. Contract Delivery Items (cont)

Agency	Item	Date
USAMC OACSC-E USATECOM	MICS Data Base Listing MICS Data Base Listing MICS Data Base Listing	10 Dec 70 16 Nov 70 13 Nov 70

Table A-III. Meetings and Conferences

Date	Purpose	Agency	Location
1 Oct 70	Discuss EDCPF data submission to ECAC	ECAC, EDCPF	Annapolis, Maryland
2 Oct 70	Discuss and coordinate contract activities	ACSC-E, EDCPF	Washington, D. C.
12-16 Oct 70	Present EDCPF orientation and capabilities briefing	CECAA, EDCPF	Tucson, Arizona
13 Oct 70	Discuss progress and plans for EDCPF contract effort	ACSC-E, EDCPF	Tucson, Arizona
14 Oct 70	Coordinate EW document acquisition	EWSC, EDCPF	Arlington, Virginia
14-15 Oct 70	Present EDCPF orientation and capabilities briefing	ACSC-E, ACSFOR, OCRD, USACDC, USASTRATCOM, ECAC, USATECOM, USAEPG, AVCS(DMIS), CECAA, USACDCSG, EDCPF	Tucson and Fort Huachuca, Arizona
15 Oct 70	Coordinate the MICS task	ACSC-E, EDCPF	Washington, D. C.
20 Oct 70	Discuss ASTRO data for use in C-E environments	USACDC, EDCPF	Fort Belvoir, Virginia
30 Oct 70	Present EDCPF capabilities briefing	USACDC, ACSC-E, EDCPF	Fort Belvoir, Virginia
30 Oct 70	Discuss contract progress, plans, and activities	ACSC-E, EDCPF	Washington, D. C.
10 Nov 70	Present EDCPF capabilities briefing	USAEPG, EDCPF	Fort Huachuca, Arizona
16 Nov 70	Coordination of EDCPF support to USAEPG	USAEPG, EDCPF	Fort Huachuca, Arizona
18-19 Nov 70	Discuss contract progress, plans, and activities	ACSC-E, EDCPF	Washington, D. C.
18 Nov 70	Discuss CE/EW-75 data requirements	CSD, ACSC-E, EDCPF	Washington, D. C.
19 Nov 70	Coordinate TACSATCOM cost effectiveness support	CSC, ACSC-E, EDCPF	Falls Church, Virginia
20 Nov 70	Present EDCPF capabilities briefing	USATECOM, EDCPF	Fort Monmouth, New Jersey
23 Nov 70	Discuss EDCPF Support to EMTF	USAEPG, EMTF, EDCPF	Vail, Arizona
1-2 Dec 70	Coordinate an EMTF Program Requirements Document	USAEPG, EMTF, EDC	Tucson, Arizona
7-11 Dec 70	Discuss EMC Standards and TD-25	EDCPF, MALLARD-JEA, UK, ECAC, ACSC-E, RAC, EMTF, USAEPG, EDCPF	Tucson and Fort Huachuca, Arizona

Table A-III. Meetings and Conferences (cont)

Date	Purpose	Agency	Location
14 Dec 70	Discuss the STANSO spectrum requirements for the development of Phase IV/V unattended ground sensors and data transmission links	ACSC-E, STANSO, USATECOM, USACDCCEA, EMTF, EDCPF	Washington, D. C.
15 Dec 70	Discuss availability of documentation on Tactical and Theater Air Forces in support of an Army in the Field	USAF, EDCPF	Washington, D. C.
15 Dec 70	Discuss availability of documentation on Enemy Forces	USASACDA, EDCPF	Arlington, Virginia
28 Dec 70	Coordinate the Program Requirements Document and Program Support Plan for RADA	USAEPC, EMTF	Fort Huachuca, Arizona

APPENDIX B

SYSTEM MAINTENANCE

The three EDCPF computer systems were maintained, operated, and enhanced as required with the major effort being devoted to the C-E Environmental Simulation System (CEESS). The changes to the CEESS were effected as a result of new data format requirements of the EMETF. Minor changes were made to the General Retrieval and Display System (GRADS) and the Data Base Maintenance and Update System (DBMUS), primarily in the area of improving data processing efficiency.

Figure B-1 shows the overall system flowchart for the CEESS with the major functional categories of data processing indicated. Figures B-2 through B-7 illustrate the detailed system flowchart on a program-by-program basis. For identification purposes the individual programs of the detailed CEESS flowchart have been outlined and grouped into the functional categories indicated in figure B-1. It should be noted that the "special purpose programs" shown in figure B-7 are optional programs which are used basically for data verification except for the translate and rotate programs which are used in the preparation of deployments.

The capabilities of the CEESS are many and varied with an emphasis on optional data processing modes. The dotted lines of figure B-1 indicate the optional routes available in the system. The first option exists in selecting the type of geographic coordinate positioning of vehicles which will be used in the deployment. Either the Deterministic Deployment technique or the Controlled Statistical Deployment technique, or a combination of both techniques, can be employed in the vehicle positioning scheme. The Deterministic Deployment technique is used when pinpoint geographic coordinate positioning of vehicles, equipments, and components is required. In this technique all geographic coordinates are manually prepared by the military tacticians and input via parameter cards into the computer program for data processing. In the Controlled Statistical Deployment technique the major coordinate positioning effort is accomplished by the computer with only key data supplied by the military tacticians. In this technique the tactician enters into the program via parameter cards, the geographic coordinate of the organizational unit command post and the geographic boundaries of the unit itself. The program then randomly deploys all vehicles, equipments, and components within that organizational unit around the specified command post within the limits indicated. The outputs of these two programs are then merged back together to form the basic deployment with all records assigned geographic coordinates.

The next major functional category with four basic options as shown in figure B-1 is the frequency assignment scheme. The four options of the frequency assignment scheme are the Controlled Statistical Frequency Assignment, the Computer Assisted Frequency Assignment (Simplex), the Computer Assisted Frequency Assignment (Duplex), and the Manual Frequency Assignment. Any one technique or any combination of the techniques can be used in assigning

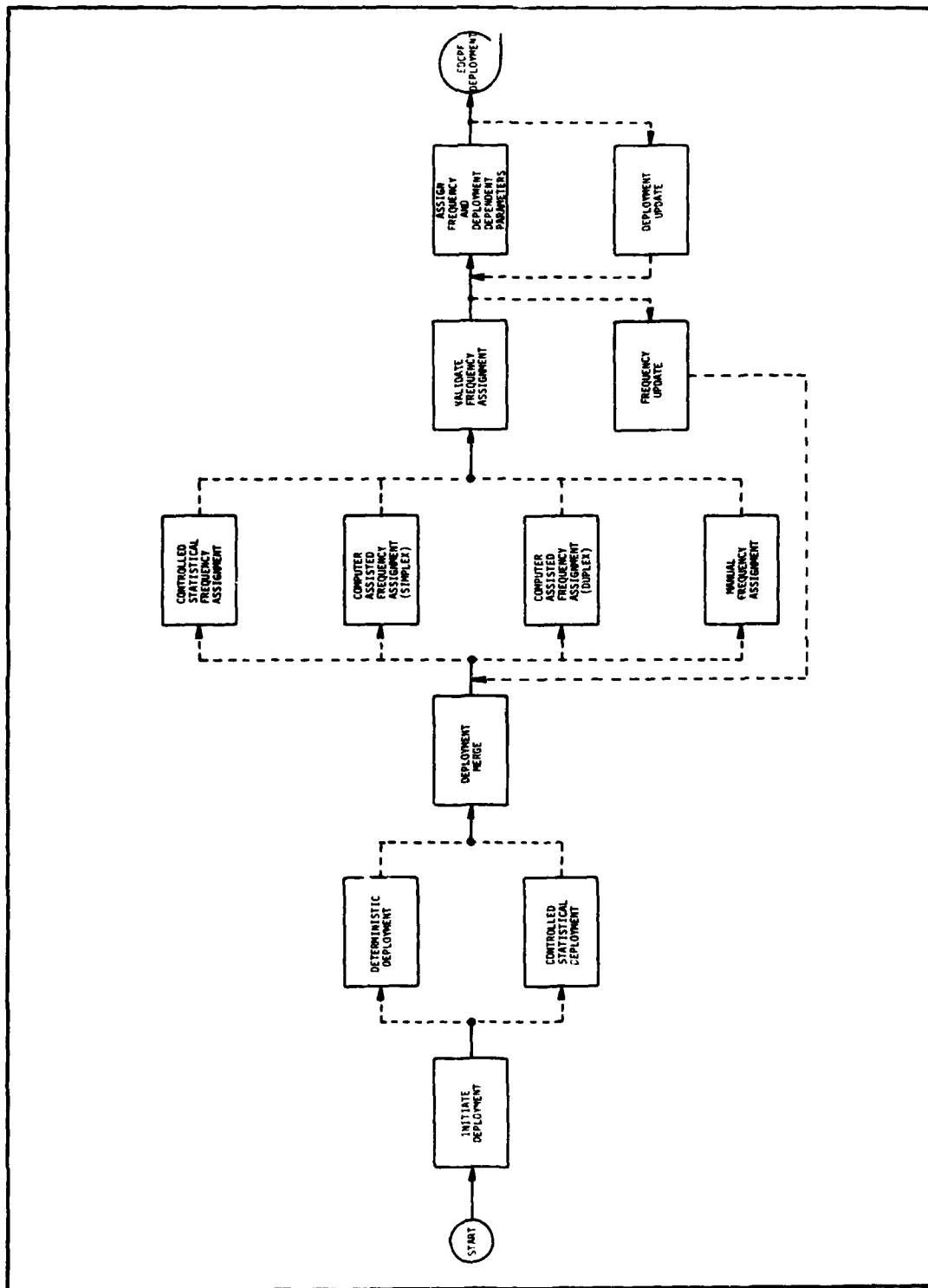


Figure B-1. Overall C-E Environmental Simulation System Flowchart

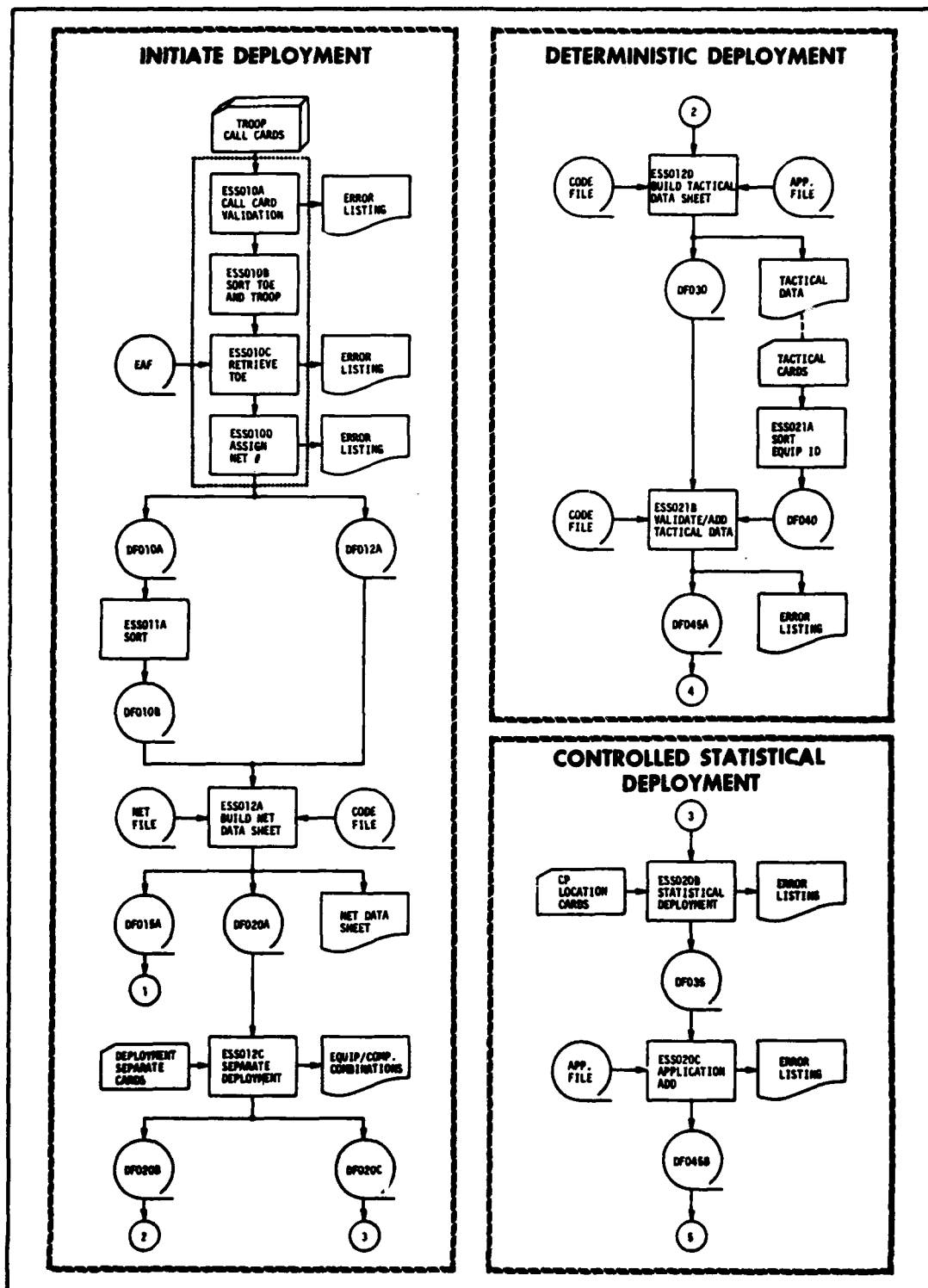


Figure B-2. Detailed C-E Environmental Simulation System Flowchart - Part I

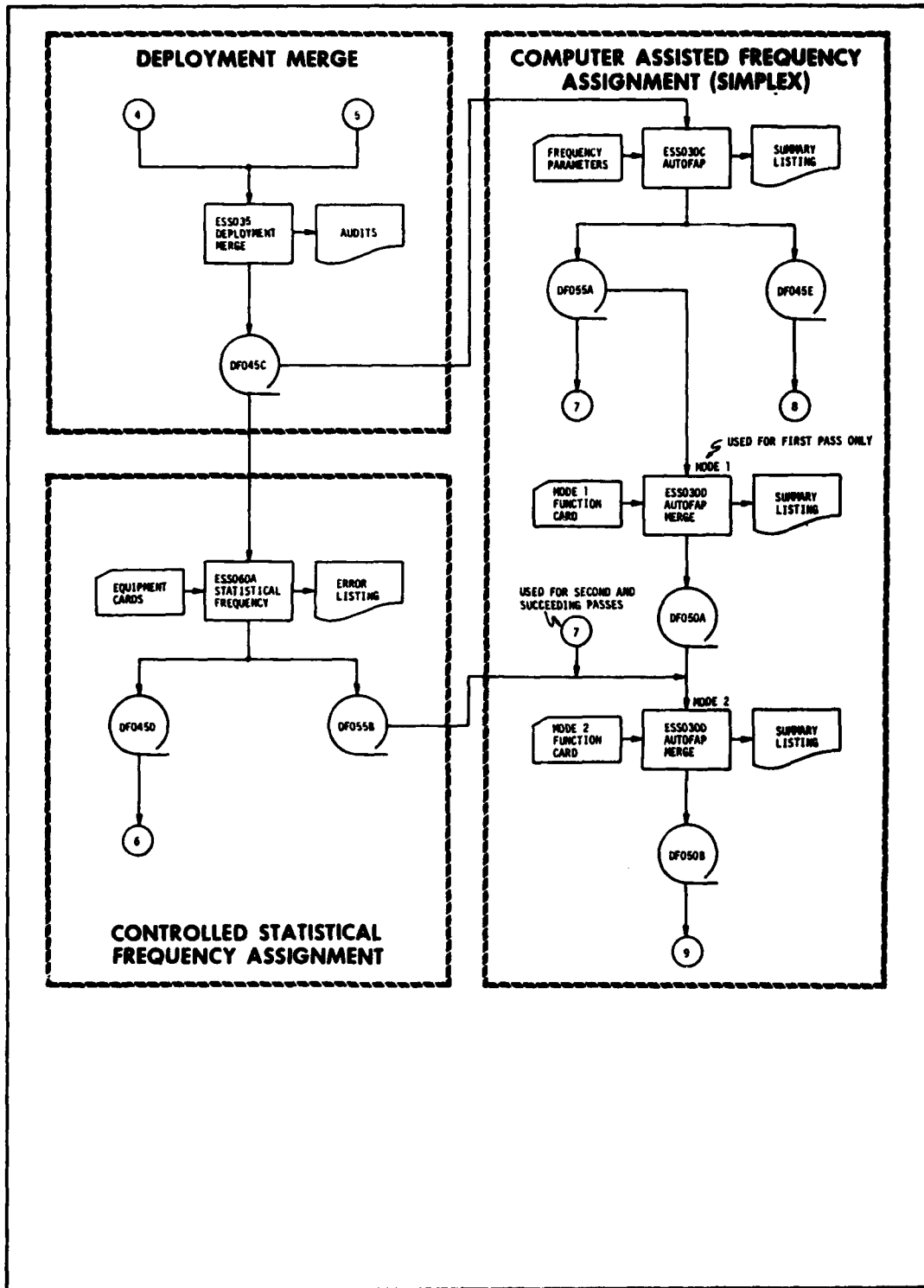


Figure B-3. Detailed C-E Environmental Simulation System Flowchart - Part II

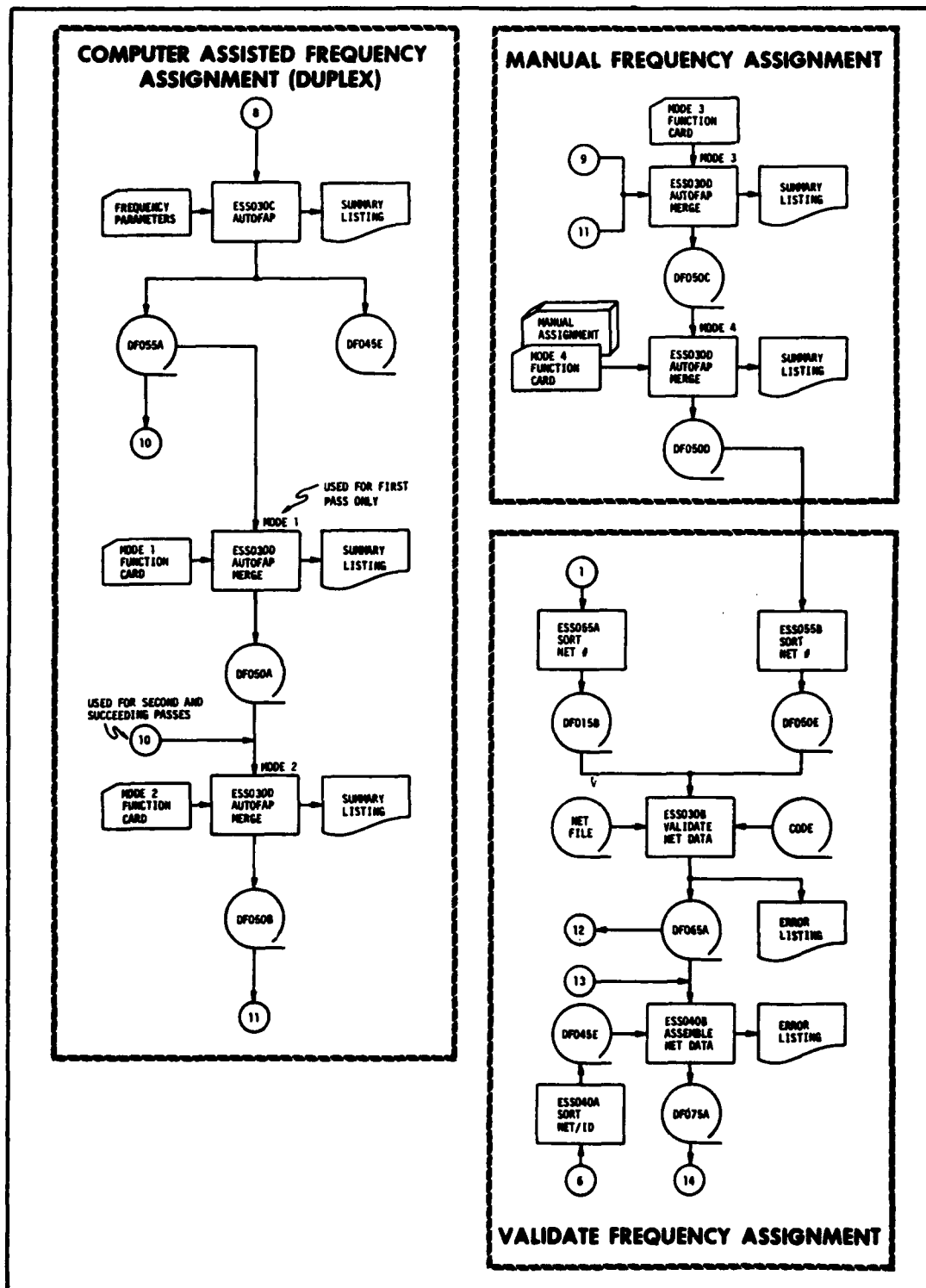


Figure B-4. Detailed C-E Environmental Simulation System Flowchart - Part III

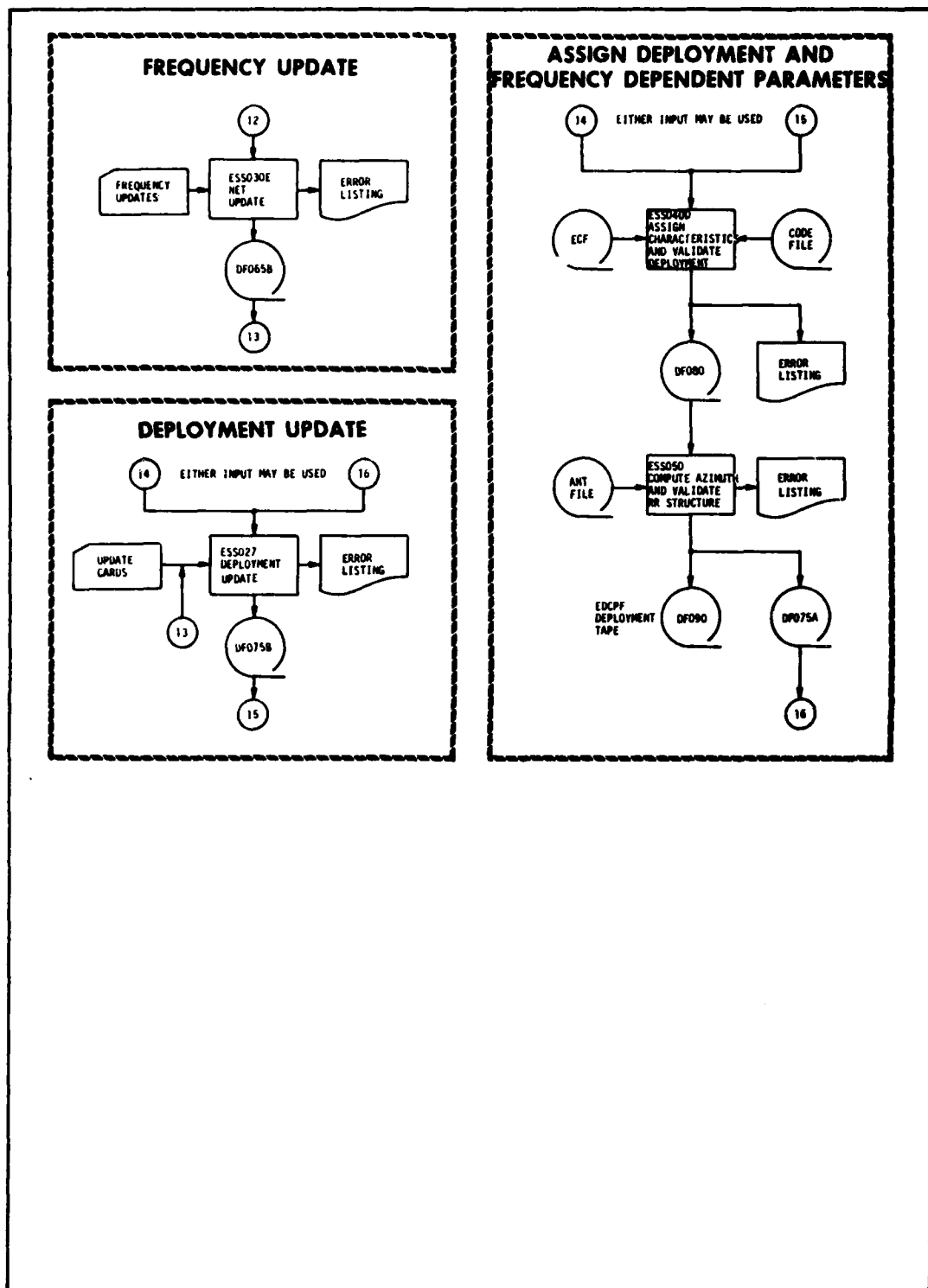


Figure B-5. Detailed C-E Environmental Simulation System Flowchart - Part IV

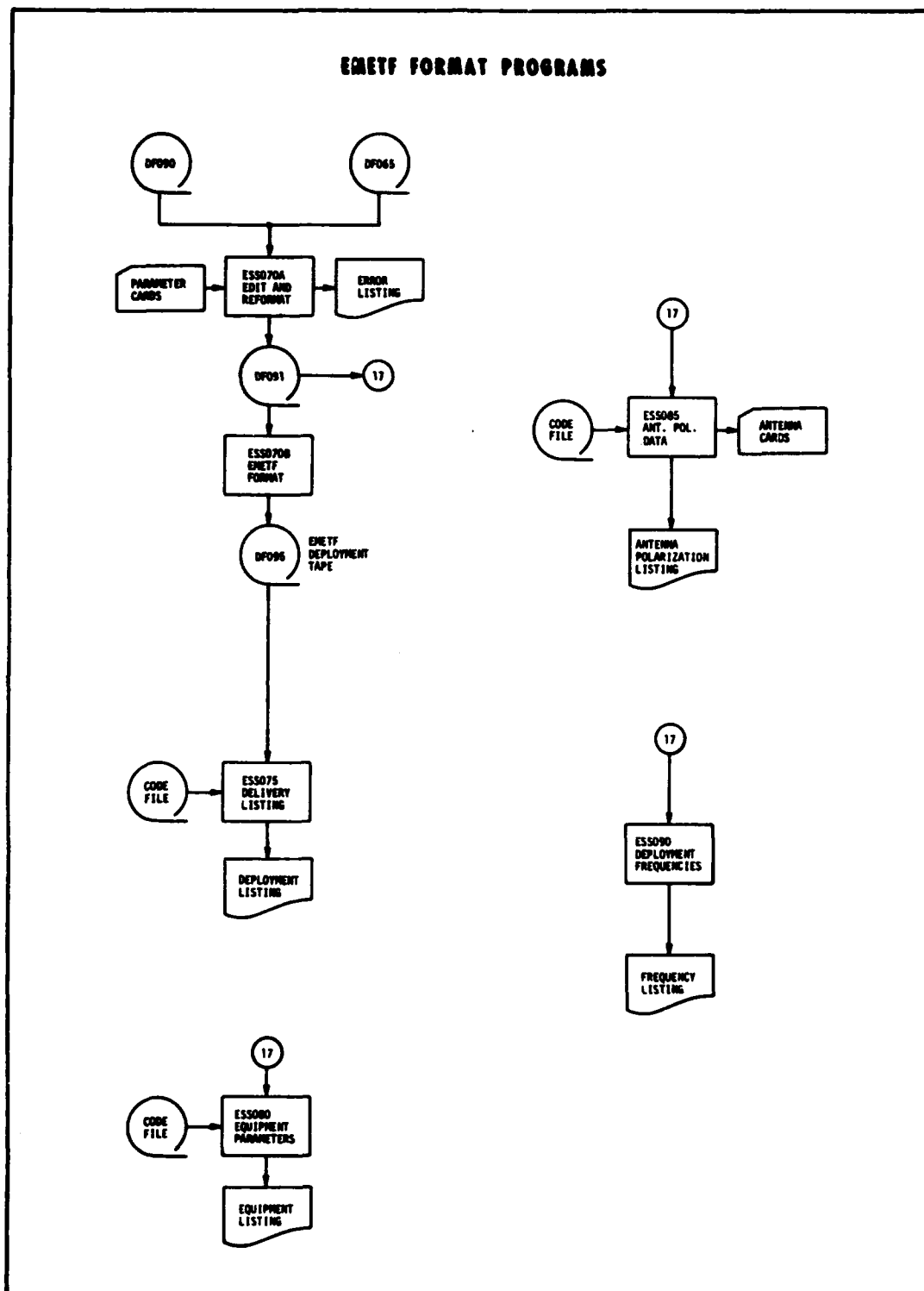


Figure B-6. Detailed C-E Environmental Simulation System Flowchart - Part V

SPECIAL PURPOSE PROGRAMS

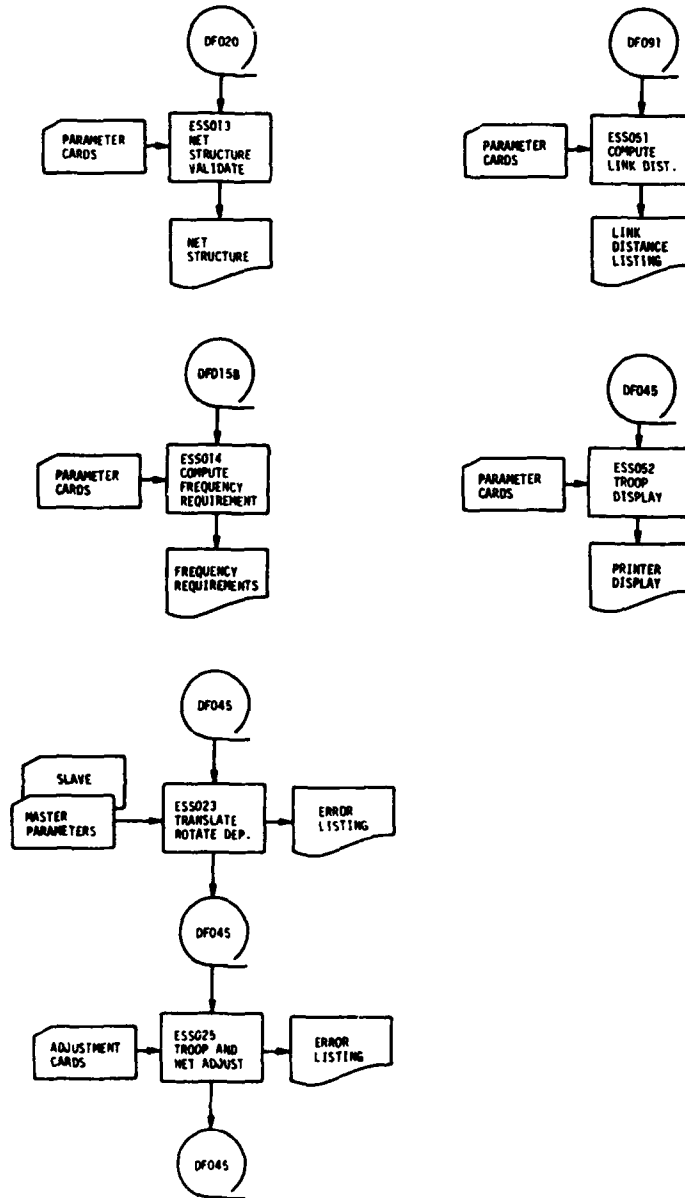


Figure B-7. Detailed C-E Environmental Simulation System Flowchart - Part VI

frequencies. The Controlled Statistical Frequency Assignment technique is primarily for use in assigning radar frequencies where the computer randomly assigns a discrete frequency from an input radar tuning range. The Computer Assisted Frequency Assignment technique is used to assign frequencies to simplex or duplex nets by the computer from input frequency lists. The principles of frequency assignment by the computer are in accordance with the procedures of standard Army doctrine as published in FM 24-2, Radio Frequency Management. The Manual Frequency Assignment technique is used whenever the military tactician manually assigns frequencies to any nets selected in the deployment. This manually prepared data is input via parameter cards to the computer program for data processing. The outputs of all the frequency assignment programs are then merged together for subsequent processing through the CEESS. The remaining functions of the system are to validate the data, add descriptive and additional data from the primary data base files (such as equipment characteristics and antenna data), update or affect any changes required, and finally format the data for the user. Figure B-8 gives the format of the new EMETF deployment tape.

The CEESS has many built-in features to validate and verify data. In all cases discrepancies are flagged by the computer and the type of error and the data record itself are printed on-line by the computer. In critical cases, data processing will halt when errors are detected and these errors must be corrected before further processing can be accomplished. Several programs are used in the actual data processing. Foremost among these programs is the ESS052, Printer Display, which displays vehicle positions within a troop to the representative scale actually deployed.

In this report period two new programs were developed and added to the CEESS which significantly add to the overall deployment production effort. ESS013, Net Structure Validate, and ESS014, Net Frequency Requirements, were designed, developed, tested, and implemented in this quarter. The Net Structure Validate is designed to produce the overall netting structure representing net assignments for the deployment being prepared. This program is used in the Initiate Deployment phase to verify the deployment netting structure so that any discrepancies in the basic net structure concept can be corrected in the master data base files prior to any subsequent data processing. The Net Frequency Requirements program is also used in the Initiate Deployment phase to assist the frequency engineer in preparing frequency lists and in making frequency assignments for the deployment. Figure B-9 shows a sample display of the output of the Net Frequency Requirements program.

As stated previously, only minor changes were made to the GRADS and the DBMUS. The Organizational Equipment List (OEL) programs which are designed to retrieve and display data from the U. S. Army Management Systems Support Agency (USAMSSA) tapes were refined in this report period. These programs retrieve only C-E type data from the USAMSSA tapes, reformat the data, and sort on SRC number for display. A sample output of these programs is shown in figure B-10. This data is then used in preparing inputs to the Equipment Authorization File to support the deployment production effort.

DATA FORMAT

TITLE DEPLOYMENT TAPE FORMAT

DATE 70 DEC 31 **SYSTEM** CEES

CARD _____ TAPE X TAPE DENSITY 800 RECORDS PER BLOCK 12

TAPE LABEL _____ **NOTE: A=ALPHABETIC, N=NUMERIC**

FIELD NO.	FIELD LGTH.	CHAR. POSIT.		CHAR. TYPE (A,N)	DATA DESCRIPTION
		START	END		
1	1	1	1	N	SECURITY CLASSIFICATION
2	10	2	11	N	NET NUMBER
3	3	12	14	N	SEQUENCE NUMBER WITHIN NET
4	8	15	22	N	ASSIGNED FREQUENCY (KHz)
5	1	23	23	N	GEOGRAPHIC QUADRANT CODE
6	7	24	30	N	LATITUDE (TEN THOUSANDTHS OF DEGREES)
7	7	31	37	N	LONGITUDE (TEN THOUSANDTHS OF DEGREES)
8	5	38	42	A/N	AIRCRAFT HEIGHT (METERS, MULTIPLIER CODE)
9	3	43	45	N	ANTENNA CODE
10	1	46	46	A	POLARIZATION
11	6	47	52	N	ANTENNA AZIMUTH (DEGREES)
12	6	53	58	N	ANTENNA ELEVATION (DEGREES)
13	3	59	61	N	ANTENNA STRUCTURE HEIGHT (TENTHS OF METERS)
14	5	62	66	N	POWER OUTPUT (DBM)
15	3	67	69	N	NUMBER OF CHANNELS
16	3	70	72	N	COMPONENT CODE
17	2	73	74	A/N	MAJOR EQUIPMENT CODE
18	2	75	76	N	MODULATION CODE
19	1	77	77	A	COMPONENT TYPE CODE
20	1	78	78	A	POSTURE CODE
21	4	79	82	N	OPERATOR NAME CODE
22	1	83	83	N	OPERATOR SEQUENCE NUMBER
23	4	84	87	N	TROOP NUMBER
24	1	88	88	N	NET CONTROL STATION (NCS) INDICATOR
25	3	89	91	A/N	VEHICLE CODE
26	3	92	94	A/N	MULTIPLE LOCATION CODE
27	1	95	95	N	DATA SET CODE
28	5	96	100	-	BLANK

Figure B-8. New EMETF Deployment Tape Format

APPENDIX C

OPERATIONAL SUPPORT

The operational support tasks for which an effort was expended during this report period are discussed in the following paragraphs.

1. Processing of DD Form 1374 Data Reports and ECAC Form X-1

Twenty-six DD Form 1374 data reports and 95 ECAC X-1 data forms were reviewed for completeness and accuracy and forwarded to the ECAC. These data forms represent inputs from the First and Fourth Armies, U. S. Army European Command, and the Office of the Chief of Engineers, Civil Works Administration.

2. ECAC Future Environmental File (X-8)

Preliminary effort on this task included an extensive review of the current and future equipment reported by the ECAC as phasing-in or phasing-out in comparison to the last submission by the EDCPF to ECAC. Extensive effort will be initiated on this task in early January 1971, with delivery to ECAC planned for 1 March 1971.

3. ECAC Organization Platform Allowance File (OPAF) Update

The first of two updates to the OPAF this year was submitted to the ECAC on 30 November 1970. Figure C-1 is a sample of the listing. The update covered all data changes made since 28 May 1970, including new TOE's, changed, rescinded, and superseded TOE data. Also included was the worldwide asset information on Army aircraft as shown in figure C-2. A second and complete update of the OPAF is scheduled for 30 June 1971.

4. Frequency Allocation to Equipment File (FAEF) (Complete)

Thirteen copies of the complete printout of the FAEF were prepared and delivered on 28 December 1970. This update included all J/F-12 allocations received by the EDCPF as of 20 October 1970. Agencies receiving the FAEF were Headquarters, Armament Development and Test Center (AFSC); Directorate of Foreign Technology; CG, Third U. S. Army; CG, Fourth U. S. Army; USCONARC; USAEPG (2); ECAC; Frequency Coordinator, White Sands Missile Range; Area Frequency Coordinator, State of Arizona; CG, U. S. Army Air Defense Center; Electronic Defense Laboratories; and USASA. Figure C-3 is a sample of the FAEF listing for the Army.

A change was made to the FAEF index format as a result of a letter from the ACSC-E to the customers requesting suggested changes. The change permits easy identification of each J/F-12 with the cognizant service; the J/F-12 numbers are listed sequentially by service (Army, Navy, Air Force). One J/F-12 number may appear as many as three times, which means the allocation concerns all three services. The revised FAEF index is shown in figure C-4.

U.S. ARMY DPAF			
AVN GRP AIRMOB DIV			011007
ALU 01-1007 C1			011007
AN/ISD-74	1		011007
AN/GPN-17	58		011007
AN/TRN-24	33		011007
AN/ASC-51	15		011007
AN/ARC-102	3		011007
AN/GUC-106	4		011007
AN/PRC-25	134		011007
AN/UHC-10	233		011007
AN/VRC-24	14		011007
AN/VRC-46	65		011007
AN/VRC-67	37		011007
AN/VRC-49	8		011007
AN/VSC-2	14		011007
AN/TG-1	1		011007
AN/TAG-1	1		011007
AN/ASC-5	1		011007
	16		011007
MMC AVN GRP AIR CAV DIV			011017
ALU 01-1017 C9			011017
AN/VRC-49	3		011017
AN/VRC-47	4		011017
AN/VRC-46	22		011017
AN/GPN-17	16		011017
AN/PRC-25	48		011017
AN/VRC-24	1		011017

Figure C-1. U. S. Army Organization Platform Allowance File Listing

U.S. ARMY TOE AND AIRCRAFT ASSOCIATION LISTING			
AIRCRAFT	TOE NO.	QUANTITY	TOTAL
OH-6A	093-GND/CONTROL HEL	01-100TC1	19
		01-102TC7	10
		01-155TC1	3
		01-156TC8	3
		01-166TC8	3
		01-177	32
		06-2006	9
		06-3006	9
		06-3007	9
		06-3027	9
		11-1226C6	2
		11-226H	1
CH-47A		17-098TC5	10
		17-1057	7
		17-1087	2
		37-0427	4
		37-0477	8
17			
CH-47A	L7-TACT-TRANSPORT-HEL	01-100TC1	48
		01-167TC5	16
		01-258H	16
3			
UH-1H	UTILITY TACT HELICOPTER	01-2526C8	2
		01-258H	1
		06-3007	2
	2		

Figure C-2. U. S. Army TOE and Aircraft Association Listing

23 DEC 70		UNCLASSIFIED FREQUENCY ALLOCATION TO EQUIPMENT FILE (ARMY)		PAGE 283	
ALLOP FREQ	1710-1850 MC/S	PREV ALLOC	J/F 12/16/69	J/F 12/16/69 AVAILABILITY OF FREQUENCY ASSIGNMENTS IN A GIVEN 10 MC/S PORTION OF THE 1710-1850 MC/S BAND SHOULD BE INVESTI- GATED PRIOR TO INTRODUCTION OF THIS EQUIPMENT IN ANY GEOGRAPHICAL AREA EQUIPMENTMENTS SHOULD BE LIMITED TO THE NUMBER INTENDED FOR USE AT THOSE RANGES WHICH HAVE INDICATED AVAILABILITY OF FREQUENCY ASSIGNMENTS. KNOWN PRECISE- MENTS FOR EACH APPROVED LOCATION ARE LISTED BELOW WITH THE FREQUENCY BANDS WHERE IN ASSIGNMENTS ARE AVAILABLE AT EACH LOCATION.	
J/P NUMBER	AN/DSU-007 SCORING SET MISS ROCKETS	A/O COMMENT			
EXTD NUMBER	AIR FORCE, ARMY (ECOM)				
COGN AGENCY	CA DOPPLER RADAR TO DETERMINE MISS DISTANCE BETWEEN AERIAL TARGET				
FUNCTION	TRANSMIT INFORMATION TO GROUND USED FOR H AND D AND OPERATIONAL EVALUATION OF AIM-TO-AIR MISSILE SYSTEMS FIRED AT TOW TARGETS AND DRONES. DOUBLE SINEWAVE SUPPRESSED CARRIER IS EMITTED. DUAL WAVE RECEIVES. DETECTS DOPPLER AND MEASURES PHASE DIFFERENCE TELEMETERS TO GROUND DATA AS DISTANCE VERSUS			PAGE FREQUENCY BANDS TO USE TYNDALL AFB 1710-1721 MC/S 200/YEAR TYNDALL AFB 1710-1781 MC/S 200/YEAR TYNDALL AFB 1732 MC/S (SPOTS) 200/YEAR TYNDALL AFB 1752 MC/S (SPOTS) 200/YEAR TYNDALL AFB 1798 MC/S (SPOTS) 200/YEAR TYNDALL AFB 1814 MC/S (SPOTS) 200/YEAR TYNDALL AFB 1834 MC/S (SPOTS) 200/YEAR EGLIN AFB 1710-1721 MC/S 200/YEAR EGLIN AFB 1770-1780 MC/S 200/YEAR EGLIN AFB 1732 MC/S (SPOTS) 200/YEAR EGLIN AFB 1752 MC/S (SPOTS) 200/YEAR EGLIN AFB 1798 MC/S (SPOTS) 200/YEAR EGLIN AFB 1814 MC/S (SPOTS) 200/YEAR EGLIN AFB 1834 MC/S (SPOTS) 200/YEAR EDWARDS AFB 1775-1785 MC/S UNKNOWN WSMR 1710-1729 MC/S 5/YEAR HOLLAMAN AFB 1719-1729 MC/S 25/YEAR	
PURPOSE	TO BE USED IN H AND D AND OPERATIONAL DRONE TOW TARGET SYSTEMS				
OPR ENVIRMT	NOTS CHINA LAKE, CALIF AFMOC HOLLAMAN AFB, N. WEA. ABCC, EGLIN AFB, FLA AIR DEFENSE COMMAND WEAPONS CENTER TYNDALL AFB, FLA AND ALL NATIONAL SERVICE TEST RANGES				
GEOG AREAS					
EVALUATE					
OPR USE	10 (PER YEAR FOR 5 YEARS) 1 (INITIALLY, BUT EVENTUALLY TACTICS MAY REQUIRE OPERATION OF SEVERAL SIMULTANEOUSLY)			NOTING THAT THE SUBJECT DEVICE HAS LIMITED TUNING FLEXIBILITY, THE PANEL RECOMMENDS THAT AN EFFORT BE MADE TO INCORPORATE INCREASED TUNING FLEXIBILITY IN FUTURE SCORER DEVELOPMENTS	
NUMBER EOPT					
INITIAL					
OPR USE					
ONE AREA				1710-1850 MHZ TOW-9/H, TOW-198, TOW-224/H TOW TARGETS HOM-14 DRONE C14-10A TARGET DRONE 70 MILLI W POWER AVG NOT AVAILABLE POWER PEP NOT AVAILABLE TYPE EMISS EMISS W/M -3 DB -20 DB OTHER FILTER R/W -3 DB -20 DB -60 DB STABILITY .05 PCT (AFTER 1 MIN WARMUP, 8 PLUS	
TARGET DATE					
OPR AVAIL					
OPERATION					
SPECT SGNR				UNCLASSIFIED	
REMARKS					
DATE APPROV				PAGE 283	
OPR W/OTHER					
TYPE ALLOC					
COORD REQD					
EXTENT USE				23 DEC 70	

Figure C-3. Frequency Allocation to Equipment File (Army) Listing

NOT REPRODUCIBLE

NOT REPRODUCIBLE

SHEET JEP NO	CLASS	ALLOCATED FREQ	UNCLASSIFIED FAEP JEP-12 NUMBER INDEX EQUIPMENT NOMENCLATURE	DARE 0045 PAGE	AGENCY
12/2764/1	U	1-635-1.535 GHz	COMMON MISSILE TELEMETRY	1063	NAVY
12/2764/1	U	1-635-1.535 GHz	UMF TELEMETRY EQUIPMENT (UMF-100)	1064	NAVY
12/2767/1	U	2-7-2.9 GHz	ASR-7 AIR SURVEILLANCE RADAR	1160	AIRFORCE
12/2767/1	U	2-7-2.9 GHz	ASR-7 AIR SURVEILLANCE RADAR	1065	NAVY
12/2764/1	U	1-600 MHz	357 MOD COMM ELECTRONICS INC (CEI) RCVR	1067	NAVY
12/2764/1	U	30-1000 MHz	COMM ELECTRONIC INC RS-111-16-1R RCVR 357	1068	NAVY
12/2751/1	U	1-635-1.56 GHz	1060 TELE-DYNAMICS TELECOM 1A DEI 10376 RX	1069	NAVY
12/2751/1	U	11-2-10.2 MHz 11-13-11.33 MHz 13.6-13.6 MHz	AN/ARN-0090 (4-1) OMEGA NAVIGATION RECEIVER	1071	NAVY
12/2752/1	U	4-30 MHz	AN/SMU-0004 (4-1) OCEANOGRAPHIC SURV RADIO	1072	NAVY
12/2753/1	U	2-2-2.3 GHz	RESEARCH ROCKET TELCOM COMIC CTM-UMF-305	1073	NAVY
12/2754/1	U	31-42 MHz	AN/FRG-0143 COMMUNICATIONS EQUIPMENT	1075	NAVY
12/2754/1	U	132-150.8 MHz	AN/FRG-0144 COMMUNICATION EQUIPMENT	1076	NAVY
12/2754/1	U	132-150.8 MHz	AN/VRC-0058 COMMUNICATIONS EQUIPMENT	1076	NAVY
12/2757/1	U	30-42 MHz	AN/VRC-0077 COMMUNICATION EQUIPMENT	1040	NAVY
12/2757/1	U	132-150.8 MHz	AN/FRG-0091, 91A COMMUNICATIONS EQUIPMENT	1081	NAVY
12/2759/1	U	225-349.95 MHz	AN/URC-0057 TRANSCIVER	1083	NAVY
12/2760/1	U	225-349.95 MHz	AN/URC-0069 TRANSCIVER	1085	NAVY
12/2761/1	U	132-150.8 MHz	UA3VSN 1100 MOBILE TRANSCIVER (MOTOROLA)	1087	NAVY
12/2762/1	U	132-150.8 MHz	3000 M/A PORTABLE RADIO SET (MOTOROLA)	1088	NAVY
12/2763/1	U	132-150.8 MHz	L4348H AM CONSOLETT BASE STATION (MOTOROLA)	1090	NAVY
12/2764/1	U	4-40 MHz	VME EXPERIMENTAL PULSE RADARS	1162	AIRFORCE
12/2764/1	U	2-7-2.95 GHz	VEGA MODEL 1075 RECON TRANSMITTER	1164	AIRFORCE
12/2764/1	U	13-16 GHz	JENOLD MODEL JMT 1316	1166	AIRFORCE
12/2767/1	U	296.8-296.8 MHz	UMF TRANSMITTER-RCVR, WOODWELL SCN 52-05710	1166	AIRFORCE
12/2767/1	U	15.016-15.016 MHz	WF SMTR-RCVR WOODWELL SCU 52-05710	1170	AIRFORCE
			UNCLASSIFIED		

UNCLASSIFIED

Figure C-4. Frequency Allocation to Equipment File Index

5. Updated FAEF Tape

The first of three updates to the FAEF tape was submitted to the ACSC-E on 27 October 1970. This update included all data received by the EDCPF since 16 June 1970. The next update to the FAEF is scheduled for 1 March 1971, with the third and last update for the current contract due on 30 June 1971.

6. Documentation and Duplicate Files

Progress on the computer program documentation effort is continuing on schedule. All programs are now system-oriented and are contained in the CEES, DBMUS, GRADS, and MICS.

Program card decks imaged in the COSY tape format are being updated as changes are made. Master data tapes are being copied as they are changed or developed. Nineteen duplicate tapes were sent to the USAEPG for duplicate storage on 6 November 1970.

7. EMETF Cosite Interference Levels Task

Support to the EMETF continued on this task during the second quarter. During a conference between the USAEPG, EMETF and EDCPF on 18 December 1970 it was determined that the 17 hours of computer time thus far expended would be all that is required by the EMETF on the CDC 3300 computer except for 1½ hours to be provided by 8 January 1971.

8. Random Access Discrete Address (RADA) System

The Program Support Plan (PSP) has been rewritten and is being coordinated with the USAEPG for comparison with the Program Requirements Document now being rewritten by the USAEPG. The PSP will be forwarded to the ACSC-E after the coordination has been completed early in the next report period.

9. Threat Assessment and Control Receiver Study

Because the meeting scheduled in August 1970 between Dalmo Victor and the EDCPF did not take place, a letter was dispatched to Dalmo Victor on 2 December 1970 requesting information as to any existing requirement for the requested data. A letter was received from Dalmo Victor on 9 December 1970 stating that the requirement for data still exists and that confirmation of clearances of their employees who will visit the EDCPF in support of the information will be submitted in the near future. A Program Support Plan will be prepared during the coming meeting and forwarded to ED for approval.

10. EDCPF Data Base Support to a Cost Effectiveness Analysis of TACSATCOM

In September a task was initiated to support the USACDCCEA in an analysis of the cost effectiveness of TACSATCOM. The support required was to provide data on TACSATCOM candidate nets in a two-corps environment, battalion level and above, for the field army, COMMZ, and an independent corps. The data was presented in three categories. Category 1 provided all candidate nets

with a mean link distance of 40 kilometers or greater. Category 2 provided all candidate nets with a mean link distance of greater than 60 kilometers. Category 3 provided all candidate nets without regard to mean link distance. The data also included items such as net identification number, net title, distance between the most widely separated transmitter and receiver within a specific net (maximum link distance), mean distance between transmitters and receivers within a net, number of stations within a net, and nomenclatures of the types of equipment within a net. The data requirement for the field army, including a matrix to support the delivery, was completed on 23 October. The final delivery of the data for the independent corps was made on 29 October.

11. Surveillance, Target Acquisition and Night Observation (STANO)

In October an effort was initiated to enter the STANO equipment into the fixed files. A request was forwarded to the Defense Documentation Center (DDC) for a bibliography search on STANO and ISTANO to assure that the latest and most valid documentation could be requisitioned to support this update to the fixed files. Upon receipt of the bibliography a request was forwarded to DDC to obtain the appropriate documentation. In the meantime STANO equipments authorized in current TOE's have been added to the Equipment Authorization File as required. Unattended ground sensors were added to the ASTRO division deployment data to provide a representative mix of phase III type sensor equipments. Entries in the EAF will be modified as required as basis of issue and other information is received. A STANO conference in Washington, D. C. on 14 December 1970 was attended by members of the EDCPF.

12. Communications Systems Diagrams, Field Army, Theater Army, Tactical Air Force, and Theater Air Force

On 16 October 1970 full size sepia copies of the Theater Army and Field Army Communications Systems Diagrams were provided to the USACDCCEA. Reduced 8½"x11" diagrams of the Tactical Air Force and Theater Air Force were also delivered at this time. Reduced size drawings of all previously delivered diagrams were delivered on 23 October 1970.

13. Data Transfer Study Report

A report was developed in October for the ED which presented the planned spectrum occupancy of a U. S. future time frame force model. The report which was to be used in a spectrum study associated with the cancellation of the MALLARD program included a bibliography of reports of digital data transmission rates and emission bandwidths for the MALLARD C-E equipments, a technical note on differential phase envelope keying (DPEK), modulation data rate and bandwidth requirements, and a spectrum occupancy table. The spectrum occupancy table contained the types of U. S. C-E equipments planned for the future time frame field army and technical characteristics of each. The following data elements were given for each equipment type: equipment nomenclature, use or service, component nomenclature, modulation type, tuning range, bandwidth (-3db RF bandwidth), number of components in the force structure, and the number of communication nets planned. The table was displayed in various sorts for ease of use as follows: tuning range, equipment nomenclature, use or

service and modulation type. The delivery of this data was made on 3 November 1970.

14. EDCPF Antenna Codes

A listing of all antenna codes was retrieved from the EDCPF codebook and provided to the USAEPG on 23 October 1970.

15. Deployment Data for Electromagnetic Compatibility Test of the M60A1E2 Tank

In October, preliminary planning and coordination with USAEPG and EMETF was initiated in anticipation of providing the required EDCPF support in accordance with the final Program Requirements Document to be published by USAEPG. The background environment to be prepared in support of this task is being created to include three austere infantry (mechanized) divisions composed of recent T-series TOE's and includes the tactical air and nondivisional elements normally expected to be found in the division areas. Included in these units are the corps field artillery groups, self-propelled HAWK battalions, medical, hospital and evacuation units, corps surveillance and transport aircraft units, and ASA, chemical, civil affairs, military intelligence and engineer units. Units outside the division boundaries required to complete communications nets are simulated. The environment is being oriented along a FEBA in contact with the enemy environment which was delivered toward the end of FY 70.

The T-series TOE's used in this deployment have been modified to provide a mix of 36 105mm gun tanks and 18 152mm gun/missile tanks per tank battalion, based upon this same mix provided in the proposed H-series TOE's. Proposed H-series TOE's for the Sheridan-equipped armored cavalry squadrons were not available; therefore, the T-series TOE's were modified to include a Shillelagh subsystem with each armored reconnaissance airborne assault vehicle (Sheridan).

16. STRATCOM, COMMZ ADA, and Theater Air Communications Systems Diagrams

On 28 October full scale sepia copies of the STRATCOM, COMMZ ADA, and Theater Air Communications Systems Diagrams together with 8 1/2" x 11" reduced copies, and vugraph projection transparencies were forwarded to the ACSC-E.

17. Net File Data

Information on the EDCPF net file was prepared and forwarded to the USAEPG on 30 October 1970. The data required by the USAEPG included a listing of the net file, a net comparison and net conversion card deck listing, and net conversion card deck. This data was required to update the EMETF Interference Prediction Model data base files. Figures C-5 and C-6 are samples of the listing.

18. Provision of Threat Data to Support Westinghouse TACSATCOM

The coordinates of the enemy EW jammers in the CE-EW-75 deployment

NOT REPRODUCIBLE

DATE 10/29/70		NET DATA FILE							PAGE 0001
1-SEC	3-NET TYPE	4-NET DESCRIPTION	5-P	6-HOOD	7-FREQ-LO	8-FREQ-HI	9-RESTRICTIONS		
15024		MP BN CMD NET FM	KY57	33	00030000	00075950			
15025		PSYOP BN CMD NET FM	KY57	33	00030000	00075950			
15026		OM PETROL OPN BN CMD NET FM	KY57	33	00030000	00075950			
15027		OM PETROL SUPT BN CMD NET FM	KY57	33	00030000	00075950			
15028		SIG CONST BN CMD NET FM	KY57	33	00030000	00075950			
15029		SIG CMD OPNS BN CMD NET FM	KY57	33	00030000	00075950			
15030		SIG MULTICOM BN CMD NET FM	KY57	33	00030000	00075950			
15031		SIG CABLE CONST BN CMD NET FM	KY57	33	00030000	00075950			
15032		SIG SUPT BN CMD NET FM	KY57	33	00030000	00075950			
15033		AREA SIG BN CMD NET FM	KY57	33	00030000	00075950			
15034		ARMY CMD SIG OPNS BN CMD NET FM	KY57	33	00030000	00075950			
15035		ARMY MULTICOM/HAD BN CMD NET FM	KY57	33	00030000	00075950			
15036		SIG BN CMD NET FM	KY57	33	00030000	00075950			
15037		SPEC FORCES BN CMD NET FM	KY57	33	00030000	00075950			
15038		SUP/TRANS BN CMD NET FM	KY57	33	00030000	00075950			
15039		SUP/SVC BN CMD NET FM	KY57	33	00030000	00075950			
15040		SUPT BN CMD NET FM	KY57	33	00030000	00075950			
15041		TANK BN CMD NET FM	KY57	33	00030000	00075950			
15042		TRANS AIR TRANS BN CMD NET FM	KY57	33	00030000	00075950			
15043		TRANS MTR TRANS BN CMD NET FM	KY57	33	00030000	00075950			
15044		TRANS TERM BN CMD NET FM	KY57	33	00030000	00075950			
15045		VULCAN/CHAP BN CMD NET FM	KY57	33	00030000	00075950			
15046		NSL MAINT BN CMD NET FM	KY57	33	00030000	00075950			
15047		ADA BN MAINT BN CMD NET FM	KY57	33	00030000	00075950			

Figure C-5. Net Data File Listing

NOT REPRODUCIBLE

DATE 10/30/70		NET FILE COMPARISON TABLE										PAGE 0001	
OLD NET	OLD NET DESCRIPTION	OLD LOW	OLD NET FREQ RANGE HIGH	NEW NET	NEW NET DESCRIPTION	NEW LOW	NEW NET FREQ RANGE HIGH	NEW NET FREQ RANGE HIGH	NEW NET FREQ RANGE HIGH	NEW NET FREQ RANGE HIGH	NEW NET FREQ RANGE HIGH		
00001	THEATER ARMY CP	11	00000001	00000001	000001	000001	000001	000001	000001	000001	000001	000001	000001
00002	AF COMPONENT CMD POST/AFCCP/	11	00000001	00000001	000002	000002	000002	000002	000002	000002	000002	000002	000002
00003	AF TAC AIR CONTROL CTR/AFCCP/	11	00000001	00000001	000003	000003	000003	000003	000003	000003	000003	000003	000003
00004	ARMY MAIN CP	11	00000001	00000001	000004	000004	000004	000004	000004	000004	000004	000004	000004
00005	ARMY ALTERNATE CP	11	00000001	00000001	000005	000005	000005	000005	000005	000005	000005	000005	000005
00006	ARMY REAR CP	11	00000001	00000001	000006	000006	000006	000006	000006	000006	000006	000006	000006
00007	AF CONTROL REPORTING CTR/CRC	11	00000001	00000001	000007	000007	000007	000007	000007	000007	000007	000007	000007
00008	FASCOM MAIN CP	11	00000001	00000001	000008	000008	000008	000008	000008	000008	000008	000008	000008
00009	FASCOM ALTERNATE CP	11	00000001	00000001	000009	000009	000009	000009	000009	000009	000009	000009	000009
00010	CONTROL REPORTING POST/CRP	11	00000001	00000001	000010	000010	000010	000010	000010	000010	000010	000010	000010
00011	COMPS MAIN CP	11	00000001	00000001	000011	000011	000011	000011	000011	000011	000011	000011	000011
00012	COMPS ALTERNATE CP	11	00000001	00000001	000012	000012	000012	000012	000012	000012	000012	000012	000012
00013	COMPS REAR CP	11	00000001	00000001	000013	000013	000013	000013	000013	000013	000013	000013	000013
00014	AF DIRECT AIR SPT CENT/DASC/	11	00000001	00000001	000014	000014	000014	000014	000014	000014	000014	000014	000014
00015	AF TAC AIR CONTROL POST/AFCCP/	11	00000001	00000001	000015	000015	000015	000015	000015	000015	000015	000015	000015
00016	DIVISION MAIN CP	11	00000001	00000001	000016	000016	000016	000016	000016	000016	000016	000016	000016
00017	DIVISION ALTERNATE CP	11	00000001	00000001	000017	000017	000017	000017	000017	000017	000017	000017	000017
00018	DIVISION REAR CP	11	00000001	00000001	000018	000018	000018	000018	000018	000018	000018	000018	000018
00019	SUPPORT COMMAND CP	11	00000001	00000001	000019	000019	000019	000019	000019	000019	000019	000019	000019
00020	DIVISION ARTILLERY CP	11	00000001	00000001	000020	000020	000020	000020	000020	000020	000020	000020	000020
00021	BRIGADE MAIN CP	11	00000001	00000001	000021	000021	000021	000021	000021	000021	000021	000021	000021
00022	BRIGADE ALTERNATE CP	11	00000001	00000001	000022	000022	000022	000022	000022	000022	000022	000022	000022
00023	BRIGADE TRAINS CP	11	00000001	00000001	000023	000023	000023	000023	000023	000023	000023	000023	000023
00024	BRIGADE FORWARD CP	11	00000001	00000001	000024	000024	000024	000024	000024	000024	000024	000024	000024
00025	REGT MAIN CP	11	00000001	00000001	000025	000025	000025	000025	000025	000025	000025	000025	000025
00026	REGT ALI CP	11	00000001	00000001	000026	000026	000026	000026	000026	000026	000026	000026	000026
00027	GROUP MAIN CP	11	00000001	00000001	000027	000027	000027	000027	000027	000027	000027	000027	000027
00028	GROUP ALTERNATE CP	11	00000001	00000001	000028	000028	000028	000028	000028	000028	000028	000028	000028
00029	BATTALION CP	11	00000001	00000001	000029	000029	000029	000029	000029	000029	000029	000029	000029
00030	SQUADRON CP	11	00000001	00000001	000030	000030	000030	000030	000030	000030	000030	000030	000030
00031	COMPANY CP	11	00000001	00000001	000031	000031	000031	000031	000031	000031	000031	000031	000031
00032	TRUP CP	11	00000001	00000001	000032	000032	000032	000032	000032	000032	000032	000032	000032
00033	BATTALION CP	11	00000001	00000001	000033	000033	000033	000033	000033	000033	000033	000033	000033
00034	GROUP ALTERNATE CP	11	00000001	00000001	000034	000034	000034	000034	000034	000034	000034	000034	000034
00035	BATTALION CP	11	00000001	00000001	000035	000035	000035	000035	000035	000035	000035	000035	000035
00036	SQUADRON CP	11	00000001	00000001	000036	000036	000036	000036	000036	000036	000036	000036	000036
00037	COMPANY CP	11	00000001	00000001	000037	000037	000037	000037	000037	000037	000037	000037	000037
00038	TRUP CP	11	00000001	00000001	000038	000038	000038	000038	000038	000038	000038	000038	000038
00039	BATTALION CP	11	00000001	00000001	000039	000039	000039	000039	000039	000039	000039	000039	000039
00040	GROUP ALTERNATE CP	11	00000001	00000001	000040	000040	000040	000040	000040	000040	000040	000040	000040
00041	BATTALION CP	11	00000001	00000001	000041	000041	000041	000041	000041	000041	000041	000041	000041
00042	SQUADRON CP	11	00000001	00000001	000042	000042	000042	000042	000042	000042	000042	000042	000042
00043	COMPANY CP	11	00000001	00000001	000043	000043	000043	000043	000043	000043	000043	000043	000043
00044	TRUP CP	11	00000001	00000001	000044	000044	000044	000044	000044	000044	000044	000044	000044
00045	BATTALION CP	11	00000001	00000001	000045	000045	000045	000045	000045	000045	000045	000045	000045
00046	GROUP ALTERNATE CP	11	00000001	00000001	000046	000046	000046	000046	000046	000046	000046	000046	000046
00047	BATTALION CP	11	00000001	00000001	000047	000047	000047	000047	000047	000047	000047	000047	000047
00048	SQUADRON CP	11	00000001	00000001	000048	000048	000048	000048	000048	000048	000048	000048	000048
00049	COMPANY CP	11	00000001	00000001	000049	000049	000049	000049	000049	000049	000049	000049	000049
00050	TRUP CP	11	00000001	00000001	000050	000050	000050	000050	000050	000050	000050	000050	000050
00051	BATTALION CP	11	00000001	00000001	000051	000051	000051	000051	000051	000051	000051	000051	000051
00052	GROUP ALTERNATE CP	11	00000001	00000001	000052	000052	000052	000052	000052	000052	000052	000052	000052
00053	BATTALION CP	11	00000001	00000001	000053	000053	000053	000053	000053	000053	000053	000053	000053
00054	SQUADRON CP	11	00000001	00000001	000054	000054	000054	000054	000054	000054	000054	000054	000054
00055	COMPANY CP	11	00000001	00000001	000055	000055	000055	000055	000055	000055	000055	000055	000055
00056	TRUP CP	11	00000001	00000001	000056	000056	000056	000056	000056	000056	000056	000056	000056
00057	BATTALION CP	11	00000001	00000001	000057	000057	000057	000057	000057	000057	000057	000057	000057
00058	GROUP ALTERNATE CP	11	00000001	00000001	000058	000058	000058	000058	000058	000058	000058	000058	000058
00059	BATTALION CP	11	00000001	00000001	000059	000059	000059	000059	000059	000059	000059	000059	000059
00060	SQUADRON CP	11	00000001	00000001	000060	000060	000060	000060	000060	000060	000060	000060	000060

Figure C-6. Net Data File Comparison Table Listing

were forwarded to the ECOM on 30 November 1970.

19. FAEF/AERF Listing (220-405 MHz)

On 6 November 1970 a retrieval was made from the FAEF and AERF on equipments falling in the 220-405 MHz band for use by the USAEPCG. The listing contained all information found on the J/F-12 frequency allocations. The retrieval was also made from the AERF since some equipments are not covered by an allocation.

20. Onsite Coordination with CECAA Programmer/Analysts

Two programmer/analysts from the CECAA visited the EDCPF during the week of 16 November 1970. The purpose of the visit was to (1) define the scope of the program conversion effort, (2) identify potential problem areas and provide recommendations to facilitate the conversion effort, (3) establish a sequence of the conversion process, (4) determine what alternatives and/or factors were considered in the approach to problem solution, for instance, file structure, program logic, and so forth, (5) obtain an understanding of the interdependency of programs and their relative importance, and (6) provide continuity of service. The support provided included an initial briefing on the operations of the EDCPF with emphasis on the various computer programs.

21. MICS Test Tapes

The MICS files were prepared and forwarded to the CECAA. Father and son master MICS files, together with a glossary file, were forwarded on 17 December 1970.

APPENDIX D

EMCP MANAGEMENT INFORMATION AND CONTROL SYSTEM (MICS)

During the report period the MICS data base was updated and modified to better serve system users. The MICS data base currently contains approximately 1,200 records. The following were the primary sources of the update information:

1. DA Form 1774-R (Army RDTE Status Report)
2. Frequency Allocation Actions and Lists
3. Minutes of AMC Technical Committee Meetings
4. Army Force Development Plan (AFDP)
5. Test Programs, USATECOM, and MASSTER

These sources were reviewed to insure that the MICS data base would reflect the current life cycle status of the C-E materiel development programs. Minimum effort was expended in reviewing program data sheets as they are updated on an annual basis and have already been examined in detail.

The composition of individual MICS reports was improved to include a cover sheet and a "Glossary of Terms and Abbreviations." Individual data sheets with a MICS report were modified as follows:

1. Lines of heading, as well as the lines of data of each report are numbered when displayed. The specific line number of the displayed data relates to the line number in the heading. This correlation facilitates relating of data in the report.

2. Line 2 of each record may be displayed twice when required. This option would be used when any field within Line 2 contains multiple items of data. Examples of such fields are:

CDOG References by Paragraph
Related Projects/Tasks by Number

3. Suppress line of record in display when no data is present.

Additional fields or elements of data were added to the MICS data base to include the following:

1. Army Strategic Operational Plan (ASOP) Priorities
2. ACSFOR Priorities
3. EDCPF Workload
4. Time Frame when proposed concept/equipment would be implemented

Data regarding ASOP and ACSFOR priorities were added to the data base to assist in determining priority ratings for EMC tasks when scheduled. In addition, several changes were made in life cycle events displayed in MICS

reports in order to accomplish the following:

1. Take maximum advantage of life cycle data contained in program data sheets and other documentation reviewed for input to the MICS.
2. Better identify status of C-E materiel programs contained in the MICS in terms of their materiel life cycle.

During this period the MICS data base was expanded to reflect TACOMAP projects/tasks, the EDCPF workload, and EMETF test programs. TACOMAP projects/tasks include such equipments as nonradiating devices such as wire, terminal equipment, and so forth. These items are being added to the MICS so that it may be more responsive to overall tactical communications requirements. Detailed information regarding the EDCPF workload and EMETF test programs has been added to the MICS so that the MICS can better address specific tasks which are the responsibility of ACSC-E and USATECOM. The EDCPF workload and EMETF test program efforts have been included under Task Number 1E665701D615. These two efforts were included under this number to simplify retrieval of data for correlation purposes.

During the report period MICS reports were provided to the following DA offices:

1. Electronics Directorate, ACSC-E
2. TACOMAP Office, ACSC-E
3. CECAA, ACSC-E
4. Program Control Office, Headquarters, AMC
5. Electronics Testing Directorate, Headquarters, USATECOM
6. EW Office, Headquarters, USAECOM

MICS reports provided to the above offices varied in size of report and type of information provided. Contents ranged from retrievals of the entire data base to limited retrievals of data on such programs as:

1. Avionics
2. Electronic Warfare
3. Tactical Communications
4. USAMC Projects/Tasks
5. EMC analysis requirements for time frame FY 71 through FY 76

In addition, PERT/Time and PERT/Cost reports were prepared for ACSC-E as requested.

APPENDIX E

DEVELOPMENT OF NEW C-E ENVIRONMENTS

1. Enemy-75 CAA and Front

This deployment required updating of some of the previously prepared deployment data, and the additional deployment of a large number of newly structured units. The environment for newly structured units was prepared by a combination of the pinpoint and the controlled distribution techniques.

The previously prepared deployment data for all equipments and systems organic to the divisions in contact along the FEBA was updated by computer processing techniques in order to resequence the troop number identities of all units in conformity with an organized sequence applicable to an integrated deployment of all units in the Front. This update also included a parallel change of discrete net numbers assigned to all components operating in nets which are internal to these divisions. Approximately 2100 additional components in these divisions along the FEBA require update by manually prepared input for each individual record in order to establish net number identity with external nets generated by the newly structured units.

The newly structured units are identified as:

- a. All ground combat divisions (eight) in a second echelon or reserve role;
- b. All non-divisional elements of the Combined Arms Armies (CAA), the Tank Armies, and the Front, exclusive of those employed in a distinct electronic warfare role; and
- c. All elements normally included in the tactical air complement considered organic to a deployment of this magnitude.

The call cards and controlled distribution cards for every newly structured unit, down to company level, were keypunched and computer processed during the report period. Each controlled distribution card contained a map coordinate for the command post of the unit represented and the control data governing distribution of the C-E components comprising the unit's inventory. From among the total inventory of components deployed by controlled distribution, approximately 16,000 were displayed on tactical data sheets for pinpoint consideration of vehicle positions resulting from the controlled distribution processing. The tactical data sheets included those components generally categorized as multichannel communications terminals and relays, airborne equipments, ground based radar, and equipments employed by such exemplified personnel as liaison officers and forward observers who are normally resident at some significant position away from their parent unit.

The CD-107 series of documents published by the USASA CDA provided basis for much of the fixed file content which was contained in this deployment. This series is currently in process of republication, and will contain

some updated data. The EDCPF has requested copies of this series, as soon as the republication has been completed.

The EDCPF requested in September a copy of sanitized extracts from the CD-76 series of documents, and from the CD-73 document. Recent information indicates that the category of classification of the CD-76 series precludes EDCPF acquisition, and that the CD-73 data can be expected sometime during the next report period. During this report period the EDCPF received a copy of the November 1968 publication, "A Type Soviet Army Front 1970-75. A Handbook in Support of the USACDC" (U). The handbook and attached change documents provided an excellent basis for verification of the troop list prior to initiation of deployment processing.

A visit was made to the USASACDA during early December to determine the validity of EDCPF assignment of frequencies. These frequencies, as assigned, were considered to be in consonance with currently governing criteria.

Tactical overlays have been prepared and reproduced for:

- a. All units and CP fragments in the Front, down to and including regimental level, at a scale of 1:250,000.
- b. Each of the five ground combat armies, down to company level, at a scale of 1:50,000.
- c. All multichannel links in the Front, exclusive of the divisional organic systems, and all known users served by multichannel terminals, at a scale of 1:250,000.

2. Two-Corps Environment (1971-1973)

This deployment evolved from the effort which had been expended during the preceding quarter in the preparation of a two-corps MALLARD background environment. This approach was adopted to most economically convert the results of MALLARD efforts to a valid application in this deployment.

The MALLARD background deployment geometry, as required by the user, is illustrated in figure E-1. The UTM map coordinates for each of the approximately 2,400 company and separate detachment size units in the MALLARD area had been manually recorded, and were considered to be equally valid for like-type units in the two-corps deployment. Similarly, the controlled distribution data for the MALLARD background units had been recorded and keypunched, and were considered valid for like-type units in the two-corps deployment.

Early in this report period, T-series TOE's for all elements of the infantry (mechanized) division base and normally attached maneuver battalions were received at the EDCPF. These TOE's were indicated as applicable to the Army Strategic and Tactical Reorganization Objectives (ASTRO). These TOE's were added to the fixed files, and the two-corps troop list was updated by substituting ASTRO divisions for the 2nd infantry, the 3rd infantry (mechanized), and the 5th infantry (mechanized) divisions shown in figure E-1.

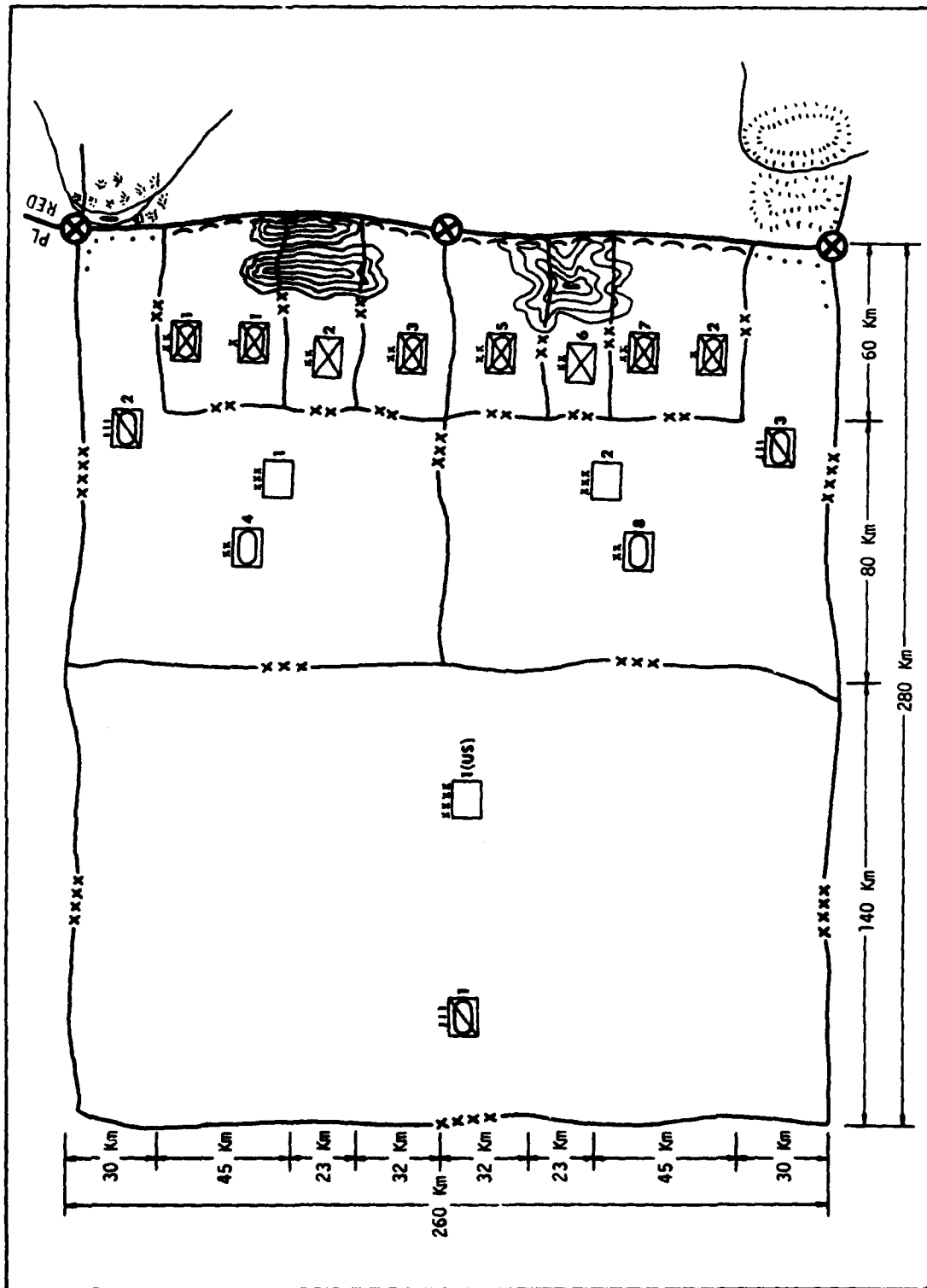


Figure E-1. Disposition of Major Field Army Elements

Minor updates were made to the controlled distribution data cards to fulfill certain positional requirements for units in the M60A1E2 tank deployment task (paragraph 15, appendix C).

Subsequent to commitment to this approach, Organization and Equipment List (OEL) tapes of TOE data were received at the EDCPF. The OEL data content indicated applicability of newer H-series TOE's for certain non-divisional units normally tenant in the division areas. The fixed files and controlled distribution data applicable to those few units deployed to support the M60A1E2 task were updated, and deployment processing to support the M60A1E2 task (ASTRO divisions) was initiated. Concurrently, H-series TOE data were extracted from OEL tapes in updating of all other fixed files required to support the two-corps deployment. Fixed file updates will be completed, and deployment effort will be resumed early in the next report period.

This deployment will be prepared by a combination of the pinpoint and controlled distribution techniques, followed by application of the deployment projection technique in order to create coincidence of the friendly force FEBA with the irregular trace of the enemy force FEBA.

UNCLASSIFIED
Security Classification

DOCUMENT CONTROL DATA - R&D <small>(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)</small>		
1. ORIGINATING ACTIVITY (Corporate author) Bell Aerospace Company Division of Textron 1050 E. Valencia Road Tucson, Arizona 85706		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED
		2b. GROUP N/A
3. REPORT TITLE Report on the Operations of the Environmental Data Collection and Processing Facility (EDCPF)		
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Formal Progress Report No. 2 - 1 October 1970 through 31 December 1970		
5. AUTHOR(S) (Last name, first name, initial) Flahie, T. J.; Warren, H. F.; Carnine, D. M.; Dolan, R. F.; Smith, E. W.; Ingram, J. A.; Niemi, A. N.; Townley, D. L.		
6. REPORT DATE March 1971	7a. TOTAL NO. OF PAGES 41	7b. NO. OF REFS None
8a. CONTRACT OR GRANT NO. DAAB07-71-C-0010	9a. ORIGINATOR'S REPORT NUMBER(S) Report No. 69 A70009-739	
a. PROJECT NO. PR&C 71X02		
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report) N/A	
d.		
10. AVAILABILITY/LIMITATION NOTICES Distribution of this document is unlimited		
11. SUPPLEMENTARY NOTES None	12. SPONSORING MILITARY ACTIVITY Electronics Directorate, Office of the Assistant Chief of Staff for Communications-Electronics	
13. ABSTRACT This report summarizes the work accomplished during the period 1 October 1970 through 31 December 1970 by the Environmental Data Collection and Processing Facility (EDCPF). A summary of the tasks assigned to the EDCPF is given and the progress and status of these tasks are outlined. The tasks covered are: project management and general support; operation, maintenance, and enhancement of the C-E Environmental Simulation System, the General Retrieval and Display System, and the Data Base Maintenance and Update System; operational support as directed by the ED; frequency management support provided to the ED by the Washington Engineering Group; development of a Management Information and Control System; updating of data base files for the U. S. and opposing forces; development of new C-E environments; and conferences attended by EDCPF personnel.		

DD FORM 1473
1 JAN 64

UNCLASSIFIED
Security Classification

UNCLASSIFIED

Security Classification

14 KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Electromagnetic Compatibility Frequency Allocation Frequency Assignment Information Retrieval Management Information System C-E Environments						

INSTRUCTIONS

1. ORIGINATING ACTIVITY: Enter the name and address of the contractor, subcontractor, grantee, Department of Defense activity or other organization (*corporate author*) issuing the report.

2a. REPORT SECURITY CLASSIFICATION: Enter the overall security classification of the report. Indicate whether "Restricted Data" is included. Marking is to be in accordance with appropriate security regulations.

2b. GROUP: Automatic downgrading is specified in DoD Directive 5200.10 and Armed Forces Industrial Manual. Enter the group number. Also, when applicable, show that optional markings have been used for Group 3 and Group 4 as authorized.

3. REPORT TITLE: Enter the complete report title in all capital letters. Titles in all cases should be unclassified. If a meaningful title cannot be selected without classification, show title classification in all capitals in parenthesis immediately following the title.

4. DESCRIPTIVE NOTES: If appropriate, enter the type of report, e.g., interim, progress, summary, annual, or final. Give the inclusive dates when a specific reporting period is covered.

5. AUTHOR(S): Enter the name(s) of author(s) as shown on or in the report. Enter last name, first name, middle initial. If military, show rank and branch of service. The name of the principal author is an absolute minimum requirement.

6. REPORT DATE: Enter the date of the report as day, month, year, or month, year. If more than one date appears on the report, use date of publication.

7a. TOTAL NUMBER OF PAGES: The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.

7b. NUMBER OF REFERENCES: Enter the total number of references cited in the report.

8a. CONTRACT OR GRANT NUMBER: If appropriate, enter the applicable number of the contract or grant under which the report was written.

8b, 8c, & 8d. PROJECT NUMBER: Enter the appropriate military department identification, such as project number, subproject number, system numbers, task number, etc.

9a. ORIGINATOR'S REPORT NUMBER(S): Enter the official report number by which the document will be identified and controlled by the originating activity. This number must be unique to this report.

9b. OTHER REPORT NUMBER(S): If the report has been assigned any other report numbers (*either by the originator or by the sponsor*), also enter this number(s).

10. AVAILABILITY/LIMITATION NOTICES: Enter any limitations on further dissemination of the report, other than those imposed by security classification, using standard statements such as:

- (1) "Qualified requesters may obtain copies of this report from DDC."
- (2) "Foreign announcement and dissemination of this report by DDC is not authorized."
- (3) "U. S. Government agencies may obtain copies of this report directly from DDC. Other qualified DDC users shall request through _____."
- (4) "U. S. military agencies may obtain copies of this report directly from DDC. Other qualified users shall request through _____."
- (5) "All distribution of this report is controlled. Qualified DDC users shall request through _____."

If the report has been furnished to the Office of Technical Services, Department of Commerce, for sale to the public, indicate this fact and enter the price, if known.

11. SUPPLEMENTARY NOTES: Use for additional explanatory notes.

12. SPONSORING MILITARY ACTIVITY: Enter the name of the departmental project office or laboratory sponsoring (*paying for*) the research and development. Include address.

13. ABSTRACT: Enter an abstract giving a brief and factual summary of the document indicative of the report, even though it may also appear elsewhere in the body of the technical report. If additional space is required, a continuation sheet shall be attached.

It is highly desirable that the abstract of classified reports be unclassified. Each paragraph of the abstract shall end with an indication of the military security classification of the information in the paragraph, represented as (TS), (S), (C), or (U).

There is no limitation on the length of the abstract. However, the suggested length is from 150 to 225 words.

14. KEY WORDS: Key words are technically meaningful terms or short phrases that characterize a report and may be used as index entries for cataloging the report. Key words must be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indication of technical context. The assignment of links, rules, and weights is optional.

UNCLASSIFIED

Security Classification